Student think tanks for responsible management – a learning experience

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Abstract

Purpose – The purpose of this paper is to describe a case study from the master program management in nonprofit organizations at the University of Applied Sciences in Osnabrück, Germany and show how this case of innovative teaching helps to educate responsible managers for the world of tomorrow.

Design/methodology/approach – The authors developed a model of a think tank to create a surrounding for students to learn about models and theories such as systems thinking and social innovations and work with practical instruments like the business canvas and design thinking. The objective was for the students to work on solutions for societal challenges.

Findings – The main findings were twofold: First, it is clear that the objective of the case was met. The evaluation at the end of both iterations made it clear, that the result is important for the students and something that they can embrace as their own. Second, the students show intense problems with the freedom that they get. It is very interesting how students are primed to perform in the regulation given by professors. Once these frameworks are loosened, they seem lost.

Originality/value – The value lies in the creation of a model that can be used by multiple professors in very different management studies. Through the model students can be taught to solve societal problems.

Keywords Design thinking, Social innovation, Systems change, Innovative teaching, Responsible management, Think tank

Paper type Case study

Introduction

The University of Applied Sciences in Osnabrück is the biggest university of applied sciences in Lower Saxony in Germany. We offer a master program called Management in Nonprofit Organizations. We are educating potential leaders in the nonprofit world, which covers multiple disciplines, for example, the arts, sport, education, social work, developmental work or environmental work. In the Master, we are focusing, on the one hand, on the theoretical framework in the relevant management areas (such as human resources, finances, evaluation, project management, law, ethics and theory of the third sector) and on the other hand, we focus on the skills and competencies future leaders in these fields of work will need. A whole focus in the studies is concentrated on this with three modules. The first module in the first semester covers the theory of the third sector. In the second semester, the module shows

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different markets in the nonprofit world and sample institutions. The third module is the one this paper is targeting. In this module, we developed in 2020 an innovative approach that was supported through a program at the university of applied sciences called "Innovation in Teaching." This program at the university focuses on the teacher leadership of professors described by Yan Liu (2021, p. 2). There the role of teacher leadership includes enabling change in teaching practices and building a collaborative culture. The experiment described in this article can be seen as an example of both areas.

These modules that are covering future challenges are important to us because we think that future leaders should be able to work with diverse futures and different challenges. The learnt theories and models have to be implemented and adapted in practical work, which is coached intensively.

Responsible management starts with thinking about possible challenges and taking responsibility for the solutions. In addition, in our understanding, it is very important to make students of for-profit and nonprofit study programs understand the importance of not only finding solutions but also first understanding the needs of the beneficiaries. Furthermore, getting the solutions to be seen, to be used and to be cherished is one of the biggest challenges. All of this, we tried on our innovative learning experiment which will be described in this paper.

Our overall aim is to educate responsible leaders, who are able to know the underlying theory, take initiative in reflecting on the situation and creating new solutions and are able to take these solutions into action together with other players.

The paper covers first of all the general scope of future challenges, then goes into the next part into the different theoretical frameworks we are using. The following part is about the pedagogical aspects of the module. In the last part, we are describing the module and its learning and development in detail. In the end, we try to draw conclusions for future work.

Future challenges in society

Our planet has boundaries – if human societies constantly and substantially transgress these boundaries, the planet will change incontrovertibly (Rockström *et al.*, 2015). The latest IPCC Report shows that in the next 20 years, global temperature warming is expected to reach or exceed 1.5 °C. Currently, the future development of the climate can still be affected by human actions (IPCC, 2021).

"Climate Action" is just one of 17 pressing societal challenges defined in the Sustainable Development Goals (SDGs). "The SDGs offer a foundation for [. . .] building an inclusive, resilient future where no one is left behind" (United Nations Foundation, 2022, p. 1). Rittel and Webber (1973) define societal problems such as the SDGs as "wicked" as they are intervened and a consequence of complex and multi-layered factors. The opposite are tame problems which can be defined and solved clearly. Ackoff (1979) defines them as messes versus problems. He points out how messes and problems are connected: "Problems are abstractions extracted from messes by analysis; they are to messes as atoms are to tables and chair" (Ackoff, 1979, p. 99).

The VUCA worldview characterizes the modern world by increasing Volatility, Uncertainty, Complexity and ambiguity (Sinha and Sinha, 2020; Johansen, 2007).

- Volatility: Things change rapidly – changes can be either big or small, good or bad, but they are unforeseeable.

- Un-certainty: Since the context changes so fast, it is difficult to predict how the future will unfold based on past experiences.

- Complexity: Things are interconnected and interdependent – thus challenges are multi-layered.

Ambiguity: The multitude of perspectives on circumstances cause confusion (Sinha and Sinha, 2020).

These multidimensional factors are also reflected in societal challenges. Minges (2011) has identified the core characteristics that constitute the grand societal challenges: First, it is difficult to define the problem. Second, multiple parties who hold different interests and perspectives on the same challenge are involved. Third, there is a lack of reliable data since the situation is uncertain. Last, finding a solution demands the parties to agree on the nature of the problem. As Minges puts it "the process is primarily one of learning and negotiation rather than the technical solution of a problem" (2011, p. 731).

Leaders are perceived to play a central role in the implementation of the SDGs (United Nations Foundation, 2022). This is a very demanding task. According to VUCA worldview, it is even more challenging to lead in a new and changing environment (Sinha and Sinha, 2020). While the nature of the problems themselves also poses, a major challenge (Weaver *et al.*, 2020; Minges, 2011; Rittel and Webber, 1973). These challenging times need holistic approaches such as systems perspectives. These help to understand underlying dynamics and to collaborate with different people and worldviews (Weaver *et al.*, 2020). "The SDGs present the ultimate "wicked problem" – requiring multiple actors to understand, realize, and bring about systemic change both globally and locally" (Weaver *et al.*, 2020).

Scientific novelty

The paper and the described think tank method combine a multitude of approaches and, therefore, describe a scientific novelty in regard to educational aspects of teaching social innovation, responsibility of students for their results and freedom of the learning process. What is new here is the combination of different theories such as systems thinking, social innovation and the Theory U together with instruments like design thinking and storytelling. The educational novelty lies in the combination of theory, practice and co-creation. The results do not only depend on the individual and the group work, but the interdependence between the groups plays an important role in the co-creation. In the end, the result in the form of a presentation to external representatives and the publication leads to a sustainable experience. Scientifically speaking it is a novelty to create an experiment on innovation in teaching and iterate the concept through ongoing evaluation and further development. Based on the concept of action research and action science from Lewin and Dewey (Adelman, 1993), the separation of knowledge and action is dissolved in this experiment of co-creation. This leads to a change of role in the educator, but also in the students. The understanding that the combination of knowledge and action takes time and effort but also achieves a higher commitment and can lead to social movement (Kemmis, 1993) is an important learning factor throughout this experiment.

Theoretical framework

The aim of the module is to prepare the students to address wicked problems. The module is structured as a think tank, which uses systems thinking and creativity methods to conduct research and find new solutions with an entrepreneurial mindset. Temporary think tanks are organized as workshops or innovation hubs, their purpose is to systematically identify opportunities for the future and to develop feasible ideas, concepts or innovations in an efficient and goal-oriented way (Poguntke, 2016). These think tanks use methods to activate creativity and dynamism (Poguntke, 2016). The following methods and frameworks were used in the think tank during the semester:

Systems thinking

Applying systems thinking to the societal challenges the students were working on helps them to understand the connections between the causes of an event, the characteristics of the systems structure and the resulting behavior (Meadows, 2009). The Socio-Ecological Model

(Bonfenbrenner, 1979) can be used to understand a system and its dynamics better. It is applied in diverse sectors to understand complex dynamics such as in the health field (Kiyani *et al.*, 2022; Karger *et al.*, 2022; Wood, 2016) or in the education sector (Allen *et al.*, 2016). The aim of the model is to make nested structures of complex systems visible (Allen *et al.*, 2016). It is divided into five layers: individual, interpersonal, organizational, community and public policy. The behavior on each level influences the others (Wood, 2016; Robinson, 2008). Applying the model helps one understand, for example, that the broader political context, the cultural values of the community as well as the social network, influences the individual. At the same time, the behavior of the individual influences its social network and community and can also effect the broader political context (Okoye, 2016).

Systems thinking can be applied to small problems as well as big visions. Figure 1 shows the different levels where problems can arrive and can be solved. Having the bigger picture in mind gives guidance in approaching big change strategically (Mühlenbein, 2018). However, Schenk *et al.* (2007) point out that the higher the level of change, the harder it is to realize the change. F1

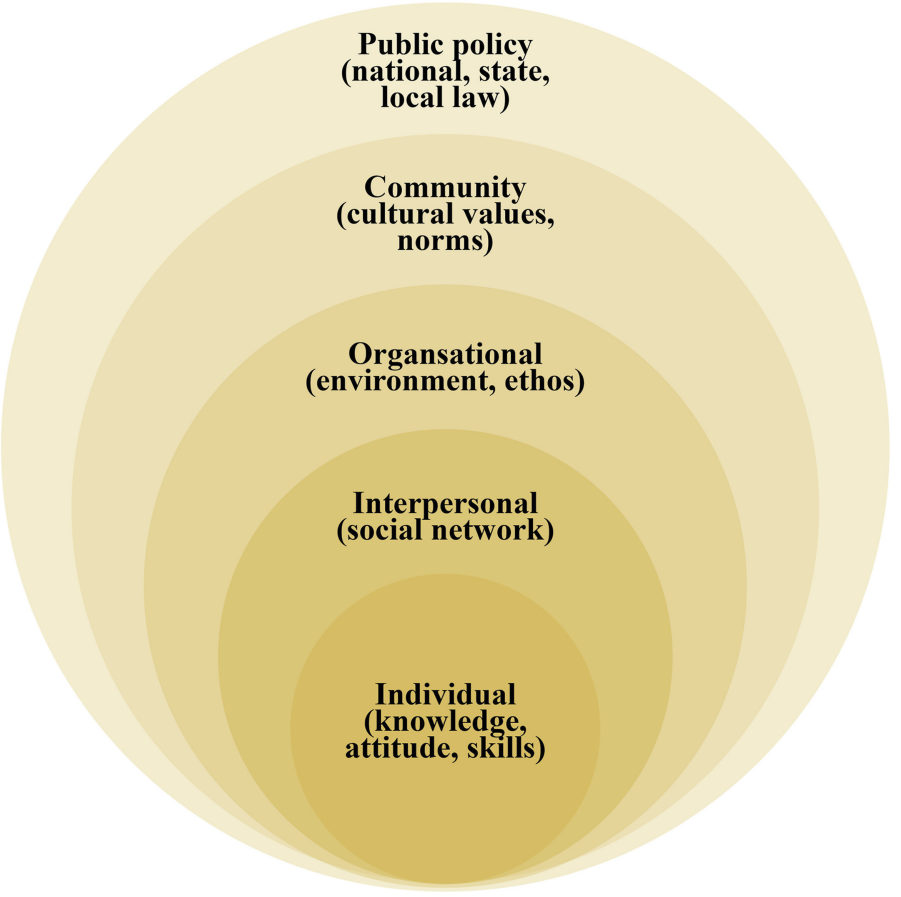

Figure 1.
Socio-ecological model

Source(s): Figure by authors after the socio-ecological model by Okoye (2016)

Social innovations

After understanding the system around the societal challenge, the students created social innovations to find innovative ways to address the problem. Social innovations overcome challenges that the government or the market cannot or does not solve on their own. The problems are often limited resources, priority placement or the inability to act due to their silo situation (Murray *et al.*, 2010). Social innovation is "expected to combine the efficiency of private firms with the social commitment of public services" (Avelino and Wittmayer, 2018, p. 48). The European Commission (2014, p. 8) identifies social innovations as a "mechanism for achieving change".

Westley and Laban (2012) define social innovation in relation to systems change:

> In the context of changing the system dynamics that created the problem in the first place, a social innovation is any initiative (product, process, program, project or platform) that challenges and, over time, contributes to changing the defining routines, resource and authority flows or beliefs of the broader social system in which it is introduced. Successful social innovations reduce vulnerability and enhance resilience. They have durability, scale and transformative impact (2012, p. 5).

Social entrepreneurs create and implement social innovations (Portales, 2019). They can be described as passionate mission-driven personalities who identify societal challenges and the underlying dynamics and solve them by using market-driven strategies to create sustainably funded organizations (based on Abu-Saifan, 2012; Zimmer and Pearson, 2018; Mair and Marti, 2006; Christie and Honig, 2006).

When creating social enterprises based on innovative ideas, the social business model canvas can be applied to develop a business model. This model makes it possible to see the business concept as well as the social impact and how they interrelate and support each other (Burkett, 2013). The Social Business Model Canvas consists of nine fields that can be filled out. They cover, for example, topics like value proposition, customer segments and key partnerships as well as revenue streams and cost structure (Burkett, 2013).

Communication

Think tanks need not only high-quality research and innovative ideas but also well-conceived communication strategies to achieve great impact. It is important to create suitable and powerful messages to communicate research (Mendizabal, 2014). To share complex information, communicate a message or illustrate something in a recognisable way people have always used the method of telling stories (Kosara and Mackinlay, 2013; Friedmann, 2018). By telling stories it is possible to "illuminate fault lines, highlight oddities, and paint a picture of the past, present, and future that is both compelling and easily understandable" (Suzuki *et al.*, 2018, p. 9). Stories can be used as a method to communicate how and why transformation is needed and transform the initial state to a final state. Often times the plot is about figures or the relationship between figures (Friedmann, 2018). During the module, the third framework which was applied is the storytelling canvas. The canvas is used to develop a story step by step in order to present an idea or product to an audience (Lokitz *et al.*, 2018). The storytelling canvas is a framework, which consists of eight fields that are filled out one after another to create a story. In the beginning, the subject and goal of the story as well as the audience are defined. Thereafter, it is important to determine how the listeners should feel before and after they have heard the story. Lastly, the story itself is created by setting the scene, making the point and drawing a conclusion (Lokitz *et al.*, 2018). When creating the story it is important to keep the perspective of the audience in mind (Lokitz *et al.*, 2018).

Pedagogical framework

The core pedagogical idea in this module was to create a more nonformal learning experience for the students. The master itself and usually also the modules follow a formal learning

setting (Coombs and Ahmed, 1974). There is a curriculum, a set number of modules and credits that have to be gained, exams to be passed and grades to be had. The master course believes though that as future leaders in the nonprofit world the students have to get comfortable also with their own intentions and their own ideas. They have to get to know how a self-intentional learning can be created. Therefore the described module aims to implement a nonformal learning environment into the formal education of the master program. Nonformal education is described as any organized, systematic educational activity carried on outside the framework of the formal system to provide selected types of learning to particular subgroups of the population (Coombs and Ahmed, 1974; Council of Europe, 2022). It arises from the learner's conscious decision to master a particular activity, skill or area of knowledge and is thus the result of intentional effort. La Belle and Thomas (1982) puts the three different learning forms (formal, nonformal and informal) in a matrix to combine these concepts, so that there can be a combination even inside a formal educational program to implement aspects of the nonformal variety. Following this thinking, the educational approach of the KAOS pilots was used. They base their programs on experimentation, exploration, experience and enterprise (Kaospilots, 2022) and try to combine formal and nonformal learning. In the experimentation and exploration phase, the students learn different models and concepts but experiment with them at the same time. In experience and enterprise, this knowledge is used to prototype solutions that can be implemented in the real world as opposed to the academic world. Another educational basis was the concept of future literacy as an educational tool to create stronger responsible leaders for (nonprofit) organizations. Futures literacy (Bergheim, 2020) helps as a method to create visions of future probabilities. The module itself did not use the method of futures literacy as an educational tool but used it as an underlying concept. This concept of potential futures, desired futures and alternate futures was combined with Otto Scharmer (2020) Theory U. Scharmer also uses the future as a guiding principle for leadership and implements iterative thinking and acting through his model. The presencing which stands in the middle of his model stands for the moment where one leaves formal education which is very much about downloading known facts and theories and enters the world of combining knowledge and emotions, of combining experience with rationality. Through this possibility of working together as a group, students can use their downloaded knowledge to create something new with the purpose of solving future challenges. The students will be able to understand the complexity of leading in a VUCA world. Finally, the educational method of design thinking (Leifer *et al.*, 2018) was used to create personas and prototypes to find solutions that responsible leaders would be able to use. Here again, the educational perspective tries to get the students to focus on the beneficiaries of potential solutions and not on the profit and power of the creators of solutions.

All these pedagogical aspects lead to the complex structure of the module. As will be described in the actual concept and the learnings, the freedom of learning was something very new and frightening for the students. This is interesting as it gives a clear indication of how much the formal education of our school system in the global north is influencing the way future leaders think and act. It has a direct impact on the competencies our students need to develop to be ready for the complex wicked problems the future leaders have to solve. As described above, wicked problems describe problems that cannot be solved in a linear way and that need the intelligence and the power of an interdisciplinary group of people working in iterative ways toward new models and solutions for these complex realities (Vandenbroeck, 2012).

Concept and iteration

To explain the concept and the iterations that have taken place so far first the sample and the used instruments will be described. After that, the first implementation and the second iteration will be discussed.

Sample and used instruments

The module has been taught in the Master course Management in Nonprofit Organizations in the third semester. The sample of students who participated was 25 students each year. The students are around 25 years old, 2/3 of the students are German nationals and 1/3 are DAAD scholarship holders from development countries. All of the students are highly motivated and have high intrinsic motivation. It is their first encounter with design thinking processes and the topic of social innovation. The module has been taught two times. It started with the first edition in the winter semester of 2020/2021. As everyone was in the middle of the pandemic, the semester was held completely digitally, even if the concept itself was planning on in-person learning. This was not a major challenge as all the chosen didactic methods can be used in the digital and the analog space. The module was evaluated during and after the first round (formative and summative evaluation) and adjusted according to the evaluation and the instructors experiences. Thus, the second time the module was taught in the winter semester 2021/2022, it was slightly different from the first round. It was also taught in person. In the following chapter, we describe the iterative way of development and change of the original concept.

The instruments used to develop and realize the module can be summed up as follows:

(1) Theoretical framing

Theoretical framing was used as the first instrument for the experiment – the module starts by giving a framework the students can work with (described in the part theoretical framework in this article). Here the knowledge is given to the students.

(2) Creative methods of teaching

Creative methods of brainstorming, design thinking, business canvas and storytelling were used as creativity tools for the students to help them co-create the best possible solutions. Through this knowledge is combined with action.

(3) Experiment for innovative teaching

The whole module was developed as an experiment for innovative teaching. The experiment went through different iterations and was developed continuously.

First implementation

The module started with a brainstorming of potential future challenges – every student was invited to bring his/her ideas. The instructors then helped cluster the ideas and find common ground. The thinking about the possible topics was already launched at the end of the summer semester so that the students had time to think about this during the summer break. The overall common ground was the scarcity of resources. Under this big topic, there were two aspects the students wanted to focus on: scarcity of water and scarcity of resources and the role of companies.

The concept of the module then went on in a complex structure where the students in the two topics divided themselves into three areas: researchers, entrepreneurs and communicators. The students got a clear description of the roles:

(1) **The researchers** were to do the scientific groundwork where important data was to be researched and analyzed. Current studies and future developments were to be analyzed and presented after the first third of the semester. The researchers were enabled to work with the socio-ecological model (see the theoretical framework in this article).

(2) On the basis of this, **the entrepreneurs** would go into the design thinking process to find eligible prototypes and work with their prototypes on their business canvas (see

theoretical framework) for these prototypes. This would take place in the middle of the semester. (Figures A1–A3 in appendix show examples of the prototypes that were developed during the design thinking phases) F2–4

(3) In the last third of the semester, **the communicators** would create a narrative for the public presentation at the end of the semester. They would work with the storytelling canvas (see theoretical framework).

To give the students the needed basis for the used models the first three sessions were focused on these models and theories (socio-ecological model, business canvas and storytelling canvas). The next sessions were always working as a combined working of the three groups. So every group had their own focus but in the sessions, they would work together as the bigger group, so that everyone was in tune with the work of the others. The design thinking for example was done by the whole group so that all the expertise could be used.

The core of the module was the design thinking process where the students focused on future solutions to the found challenge. In one session, design thinking was introduced. The societal challenge they chose was defined in a more precise way and personas were formed. This was the important step where the students focus on the view of the beneficiaries. Between this session and the main design thinking workshop the students went out and did market research with their target groups. In the main workshop, they designed their prototypes. This could be products or services or open access solutions.

The second core of the module was the presentation which was done in front of internal (professors) and external guests (experts and practitioners from different fields). Here the full power of the narration took place. The students developed very intelligent narratives to capture the audience and to make the chosen audience understand their concept.

The third core was the final publication which was designed and published as an open-access publication in the library of the University of Applied Sciences Osnabrück. Through the library network, this publication can be accessed by other libraries too.

The grading was done on the presentation and the publication and the level of quality of these works.

The main challenges in this first concept seemed to be the complexity of the system and the freedom of thinking and acting. The level of freedom was staggering for the students. Questions asked were frequently: How should the presentation look like? What are you expecting us to come up with? How can we work when we don't know what the others are doing exactly? It was interesting to see how this format broke with all the usual expectations of the students: a set structure, a clearly described framework for the results with word number and citation rules, etc. Here clearly the formal learning experience clashed with this more nonformal format. Confronted with their own decisions and their own work was a real challenge for them as a team and as an individual. Even though all roles were described quite clearly and the time schedule was clear, to depend on other teams without knowing their results was a threat to the students. There clearly was also not enough time planned by the instructors for more inner team discussions. Throughout the semester, the instructors focused on an ongoing coaching process and saw that the teams were able to work according to the framework. Really, there never was a point where the students were completely lost – from the outside perspective of the instructors. The evaluation showed the deep feeling from the students that they were lost.

Looking at the presentations and the publication one can see the excellence of the results. The feedback of the external experts was clearly positive, the narratives that were developed and the prototypes were very clever and extremely well presented. The group which focused on water scarcity, for example, developed an online platform on the topic which combines

information, exchange, collaboration and funding for the topic. This was put into a framework to activate youth for the topic and there the narrative focused in the presentation on serious games to get the young generation interested in the topic. The group covering the topic of scarcity and economy came up with a consultancy idea to foster change in companies and their relation to resources. This was put into a narrative of a fictional CEO of a medium-sized organization that discovered during a visit to a conference the importance of the topic and the positive impact of the consultancy. So in the end the resulting presentations were very creative and absolutely impressive, but the way to this end was not without crisis. The evaluation also showed that while during the process, the students had their problems, they were very satisfied with the end result [1]. Table 1 shows students comments in the evaluation.

Second implementation

Based on the experiences in the first round combined with the results of an evaluation conducted following that round, the module was further developed. The think tank structure combining research and developing new solutions using the systems thinking approach and the design thinking workshop remained the way it was before. This time the overall topic was not selected by the students, instead the instructors made an opinion poll with NGOs from Osnabrück to find out the topics which concern the local NGOs. "Sustainability" was mentioned the most, followed by political participation, diversity, inclusion and digitalization. The decision for the overall topic was accordingly not made by the students to reduce complexity. Still, the students could choose the topic in the field of sustainability they wanted to pursue on their own. This motivated them according to the evaluation.

Overall, two main things were changed: First, instead of the three areas (researchers, entrepreneurs and communicators), there were just two: researchers and entrepreneurs. Since there was no communication group anymore, the researchers and entrepreneurs applied the storytelling canvas to prepare their final presentations – this helped them to effectively communicate their solutions. Second, the division of the groups was changed. Instead of having one group that focuses on research and one that elaborates on entrepreneurial ideas, the groups consisted of around six students that worked on one topic which consisted of about three researchers and three entrepreneurs. There was a group with only four people (two researchers and two entrepreneurs) and also some groups with more than six people. The division of the groups was managed through a moderated process. In the evaluation of the second round, there was no negative feedback regarding the constellation and size of the group.

As a result of the new group structure, there was no need for a presentation of the research results in the middle of the semester because the researchers and entrepreneurs were working

Student 1	"[I learned] overcoming the attitude 'I don't know anything about this' (e.g. when planning the cost structure or similar); Learning: Motivation and courage can lead to a good result, even if the previous knowledge is relatively low/the task is very broad; expanding competences regarding group work/efficient meetings."
Student 2	"I realised how much effort it takes when several "departments" work together, how much extra work it means when communication is difficult and how important interface management is. [I learned] how an idea can become more concrete and what is important to market this idea theoretically."
Student 3	"It was interesting to see how much we are geared in the university system to get a clear task and then work on it. And how much frustration arises when it doesn't follow the usual pattern. Here I questioned how useful this kind of learning is, which is always focused on exam performance. Perhaps the competence of "enduring uncertainty" is not wrong either. But the uncertainty could perhaps be minimised a little."

Source(s): Table by authors from the evaluation first implementation (comments were translated from German)

Table 1. Evaluation from students

together at the same table during the whole module. In some lectures, the focus was on research topics, in these cases, the entrepreneurs functioned as a supportive advisory group. Sometimes, it went the other way around. That made it transparent for the other group what was currently being worked on.

As mentioned the main topic in the second implementation was "Sustainability in Osnabrück 2030." The students received background information (literature and reports) about this topic before the first lecture. In the first lecture, the students were invited to collect the topics they were most interested in on presentation cards. After doing this, these cards were clustered into eight topics. Next, the students were invited to choose a topic and a role (entrepreneur or researcher) on the clustered topic. Five of the eight topics were chosen: mobility, sustainable education, sustainable purchasing, sustainable economy and urban planning. In the upcoming weeks, the focus was on understanding the system. The students applied the socio-ecological model to their specific topic. After that, the researchers conducted interviews and literature reviews to get a deeper understanding of the topic. Then the design thinking workshop took place. Before starting the workshop, the researchers reported briefly and informally within the group on their findings so far. During the workshop, they continued to integrate them. This was especially relevant during the first steps of the design thinking process when the focus is understanding the problem. After the workshop, the entrepreneurs developed their solutions using the business model canvas and the researchers further elaborated their research in detail. As the last step of the workflow, the students applied the storytelling canvas to their topics and created the presentation together.

In the presentations and publications, the students have exclusively delivered outstanding results. For example, the group "Mobility in Osnabrück" interviewed NGOs promoting the field of bicycle mobility. Through the interviews, the researchers found out, that in particular citizens need to be convinced to use bicycles regularly. The entrepreneurs developed the idea of "bicycle days" in Osnabrück – during these days, the city would be closed to cars. The idea was to make a city without cars experienceable. All results were creative and well thought out. All students received positive feedback from external experts, especially from the city of Osnabrück [2].

Conclusion and adaptation

As a result, it is relevant to prepare future leaders for the challenges society is currently facing. These challenges are complex and multi-layered. In order to act constructively in this complexity, several competencies for responsible leaders are required: First, the ability to address these challenges is proactive and self-reliant. Second, in the best case, to find suitable solutions for them and lastly, to be able to communicate these ideas purposefully and effectively. The module trains these exact competencies.

It seems important to create and implement modules in our formal education that enable and empower students to understand their competencies and their skills. Nonformal learning experiences like that go beyond previous experiences. They experience that the outcome is not always clear from the beginning, the criteria for success are not always set before reaching success and that not always we know in advance what will happen during a project.

The students in the master program described are already a very conscious and reflective target group. Our experience showed us that even with this group, it was difficult to implement a trust in the process rather than a trust solely in the result. So one of our main findings is that experiments like this should be part of any management study, not only nonprofit management but also the usual business management programs. Additionally, methods like design thinking and systems thinking can be applied in other areas of studies. Thinking out of the box and in systems can educate all students, regardless of the field of study, to better address current challenges.

Furthermore, it can be said that by giving a group the possibility to choose a topic on their own, a dynamic of intrinsic motivation and team spirit arises. Presenting new research findings and solutions at the end of the semester made the students proud. Especially, because we invited experts on the topics from organizations, the city council and the university. This allows the students to create a dialogue with practitioners and experts on the elaborated ideas and findings. Further ensuring the students develop ideas that actually reach people who could implement them.

For the long-term success of such a module, it is important that the lecturer evaluates and reflects on the process after each semester. The will to observe, understand and improve is a core attitude that the lecturer should bring along to achieve the maximum learning experience in a nonformal context for the students.

In the end, this experiment needed three components in a university setting:

(1) a leadership in the university which empowers their professors to create new learning settings (the University of Applied Sciences has several programs and support possibilities to enable the professors through time and money to create such new possibilities)

(2) an instructor/professor who is interested in creating new experiences which also includes being interested and open to failure and change. The need to reflect and accept that their creation might not be perfect in the first round is a basic need that most probably is also a learning process for the professor

(3) a group of students who are willing to accept an experimental setting and who are interested in creating new solutions on their own. In most cases, every student group will be able to be interested in this, if the support and guidance from the instructors are clear and engaging.

As conclusion, we can say that think tanks can be a suitable teaching solution when it comes to teaching social innovation and coming up with your own chosen solutions. The role of the instructor changes here completely from a teacher to a coach and consultant. The instructor is responsible for guiding the students through the process, to ensure that they can endure the pressure of freedom and understand the merits of co-creation. Therefore, the character of the instructor and the role is completely different from the normal role of a professor being responsible for disseminating knowledge. This different role of the professor makes the experience for the students even more intense. The effect on the students is high at every point of the module. In the beginning, the effect is to formulate and find their own social challenge that is important to them. During the module the effect is twofold – to understand and live with the freedom of the exercise and to co-create with the other group of students, being dependent on the content of the other groups. In the end, the effect is to see that the result was worth all the insecurity of the process and that believing in the process was the right way to go. The combination of knowledge and action is a profound learning process that includes to learn about participation and change as a group.

Notes

1. The publication can be found under https://opus.hs-osnabrueck.de/frontdoor/index/index/start/1/rows/10/sortfield/score/sortorder/desc/searchtype/simple/query/denkwerkstatt/docId/2106
2. The publication for the second implementation can be found here: https://doi.org/10.48769/opus-3282

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Appendix

Source(s): Photo taken by authors

Figure A1. Example design thinking result 1 "BildungsBus" (educationbus)

Source(s): Photo taken by authors

Figure A2. Example design thinking result 2 "Fahrradtage in Osnabrück" (cycling days in osnabrück)

Source(s): Photo taken by authors

Figure A3.
Example design thinking result 3 "BauWagen" (construction trailer)

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