

The Emergence of the Indicative Societal Cost-Benefit Analysis: a Case Study

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ABSTRACT

In this article, we describe the emergence of a new Finance course in line with the concept of the Societal Cost-Benefit Analysis (SCBA). By means of an in-depth case study, we reconstruct the process of dissatisfaction and corresponding discussions among lecturers and students of the Master Integrated Care Design with regard to the learning aims and content of the Finance course, which is a study module of this master. During the period 2015-2021, the aims and content of this module were revised and remoulded several times in order to define a Finance course that was able to both sufficiently and creatively connect the domain of Integrated Care with that of Finance. In this process of reiterating revision both lectures and students played a crucial role. The ultimate result – the indicative Societal Cost-Benefit Analysis – was unexpected and unplanned, producing an outcome that surpassed the sum of its separate parts. In short, the process, as we describe in this case study, bears all the hallmarks of emergence. Moreover, the analysis shows how this process of emergence in combination with emergent leadership led to a practicable and encouraging outcome, which satisfied and committed all stakeholders, setting an example that is worth following.

KEYWORDS

Emergence - Emergent leadership - Curriculum development - Case study - Societal Cost-Benefit Analysis

INTRODUCTION

Context and connection to previous research

Reason and background of this case study is the development process of the Finance course as part of the curriculum of the Master Integrated Care Design at a Dutch university. As will be shown in this study, the development of this course proved to be an emergent process in which the input of students played an important role. In fact, this case illustrates an iterative development process which is characterized by collaborative learning of both lecturers and students, positioning the students as co-makers of this course (Saito & Fatemi, 2022).

During the period 2017-2021, this Finance course went through several fundamental changes. In fact, during this period each outcome turned out to have some shortcomings that presented new opportunities (Feldman, 2000). A final change in 2020 transformed the course into its present configuration of an indicative Societal Cost Benefit Analysis (iSCBA).

The development process of the Finance course turned out to be “a constructive and bottom-up process rather than a prescriptive top-down process” (Boonstra & Bennebroek Gravenhorst, 1998, p. 110). It is important to add that this type of change was fuelled by both the practice-based contributions of the students, who were all professionally active in the domains of health care and social welfare, and the development goal to foster the relevance of the Finance course for these types of professionals. Therefore, this process is reminiscent of the description by Berggren and Söderlund (2011) of the development of an educational program in co-creation with practitioners. They describe a development that “needed more time to evolve, in a process of iterative trials and feedback, the basic reason being that these practices, in an explicit way, had to cope with the competing demands of academic rigor and organizational relevance” (Berggren & Söderlund, 2011, p. 401).

Aforementioned findings are in keeping with the plea of Saito and Fatemi (2022) to discuss “the possibility of recognising students’ stumbles during the classes as seeds for improvisational curriculum development and design, positioning the students as curriculum co-makers, with their teachers”(Saito & Fatemi, 2022, p. 1). In the development of the Finance course the experiences and voices of students played a crucial role and contributed to the conditions for an emergent development.

In line with Saito and Fatemi (2022), this research shows that it is crucial to have educational leadership to enable this approach. This type of leadership, which makes novelty emerge, can be characterized as ‘emergent leadership’ and defined as a collective behaviour of interacting actors (Van Kemenade, 2021). In this definition the concept of distributed leadership (Jäppinen & Sarja, 2011; Woods, 2016) reverberates, which is described by Jäppinen and Sarja (2012) as the distribution of interest, vision and aims in order to achieve something more than the actors in question can perform separately. Or in other words, “the issue is one of synergy creation where the whole is greater than the sum of its parts” (Jäppinen & Sarja, 2011, p. 65).

Research aims

This research aims at an in-depth case description of the emergence of iSCBA as the new content of the Finance course of the Master Integrated Care Design at a Dutch university. In doing so, the case reflects on the actions and collaborative learning of both lecturers and students

and analyses to what extent one could speak of ‘emergence’ and of ‘emergent leadership’ in the development of the course.

This study is structured as follows. Firstly, a theoretical background will be presented regarding the concept of emergence of innovation and emergent leadership and the societal cost-benefit analysis (SCBA). Thereupon, the methods used in this study will be explained. The next chapter describes the actual case study of the development of the iSCBA course, that leads to findings, a discussion and concluding remarks.

THEORETICAL BACKGROUND

Emergence

The concept of emergence stems from complexity science and refers to an unforeseen happening of effects due to complex causes, not analysable simply as the sum of their effects because the whole is more than the sum of its parts. Emergence is defined as the phenomenon where out of a network of interacting internal and external elements in the course of time arises a coherent new pattern, that is unpredictable, unexpected, unplanned and irreducible to the separate parts (Van Kemenade, 2020).

Emergent change has been witnessed in almost every scientific discipline from fractals in geometry, to ant hills and the murmuration of sparrows in biology. The phenomenon has been studied on a great amount of subjects in organisations (e.g. Bonometti, 2012; Chaffin & Gunderson, 2016; Poutanen et al., 2016; Roundy et al., 2018). For example, Kondakci and Van den Broeck (2009) report on the emergent process of internationalisation in a higher education institute.

In leadership literature it is questioned how much influence leaders can have on the emergence of innovations. Complexity science reframes leadership by focusing on the dynamic interactions between all individuals, explaining how those interactions can, under certain conditions, produce emergent outcomes (Lichtenstein & Plowman, 2009). In the complexity approach, leadership is not considered to be a person or persons. Rather, it is the recognizable pattern of organizing activity among autonomous heterogeneous individuals as they form into a system of action (Hazy et al., 2007; Hazy & Uhl-Bien, 2013; Lichtenstein et al., 2006; Uhl-Bien et al., 2007). Poutanen et al. (2016) state that the complexity science perspective guides innovative managers and organizations to focus on the conditions that favour innovation rather than control. Leadership that makes novelty emerge is a collective behaviour of interacting internal and external actors. It can only be facilitated. Van Kemenade (2021) calls this ‘emergent leadership’.

Societal Cost-Benefit Analysis (SCBA)

A SCBA assesses ex ante the impact of an investment on society by estimating all relevant costs and revenues, both financial and non-financial. This type of analysis is an important contribution to policy development. Publications of public planning and research agencies in the Netherlands underline the contribution of SCBA’s to policymaking in the field of public health and social welfare (Pomp, Schoemaker and Polder, 2014; Schoemaker and Pomp, 2015; Wijnen et al., 2017). Deviating from a narrow financial and calculating design, a SCBA is based on a broad concept of prosperity. In this concept, ‘soft’ values such as health and culture

are also included as beneficial contributions to the welfare and well-being of both individuals and society (Koopmans et al., 2016).

A SCBA also offers the opportunity to provide insight into distribution effects. The benefits may be distributed among other stakeholders than those who bore the costs of the program, the so-called ‘wrong pocket’ problem (Koopmans et al., 2016). To overcome the hesitation to invest, a reliable estimation of all relevant costs and revenues and their (re)distributions amongst stakeholders can be a convincing remedy. Moreover, the distribution effects may transcend the healthcare sector. For example, excessive alcohol use not only has effects on health, but also has effects on domains such as justice, road safety, labour and education. Traditional cost-effectiveness analyses do hardly take these kinds of intersectoral effects into account (Hoeymans & Polder, 2015).

So far, many SCBA’s on health and social welfare issues are drafted from a macro perspective, investigating (inter)national wide mechanisms of action. In these studies, the focus on the individual civilian and corresponding context is underexposed. To overcome this objection, one could also opt for a micro or meso level perspective by performing a SCBA through the lens of a local health care and welfare network and to aim for a context-sensitive application. In this approach, the consecutive research steps are explored in a bottom-up direction, starting with an innovation in a local network and subsequently investigating all possible social cost-benefit effects, including spill-over effects outside the network (Hoeymans & Polder, 2015).

The scope of this meso-oriented and bottom-up directed SCBA is not as broad and comprehensive as a macro-oriented SCBA. To earmark this difference, the meso-oriented and bottom-up directed SCBA is defined as indicative SCBA (iSCBA) (Van Erp & Schuitemaker, 2022). Due to its scope, the outcomes of an iSCBA are only partially quantifiable but nevertheless useful in of a decision-making process to evaluate whether the intended benefits are feasible (Pomp, Schoemaker and Polder, 2014).

METHODOLOGY

In accordance with many scholars on change, a case study design was chosen for this research (Kondakci and Van den Broeck, 2009). This study used three sources of data to sketch an accurate picture of the development efforts with regard to the Finance course. First of all, the development and alterations in the course material were studied, as well as the Finance course assessments of the students during the period 2017-2021. This latter source of data was used to see how these students processed the course content. The findings of these two sources of data were compared with each other as well as with the data of a third source, the evaluation reports regarding this course. These reports reveal the deliberations and opinions of both lecturers and students. All participants provided verbal (lecturers) or written (students) informed consent.

The case study is analysed on two topics. Firstly, the analysis investigates to what extent one could speak of the emergence of iSCBA in the curriculum of MIZW. For that purpose, the attributes of emergence as defined in Van Kemenade (2020) were used (Table 1).

Table 1: Attributes of emergence

1. Interaction/synergy between internal and external elements
2. That occur at the same time (synchronicity)
3. The whole is different than the sum of its parts
4. Irreducible to the separate parts
5. Unpredictable
6. Unexpected
7. Unplanned
8. Leading to a new coherent pattern (novelty)

Secondly, the case study analyses to what extent the emergence of iSCBA in the curriculum of MIZW is an example of emergent leadership. For that purpose, the Medusa principles of emergent leadership were used (Van Kemenade, 2021). Van Kemenade (2021) did a literature search which resulted in six principles of emergent leadership: enabling, sharing needs, dreaming the future, interacting by diverse and interdependent actors, context sensitivity and adapting. In Dutch these principles form the acronym Medusa (see Table 2).

Table 2: Principles of emergent leadership

Principle	Description
Enabling (Mogelijk maken)	Catalysing adaptive dynamics by fostering interaction, fostering interdependency and injecting adaptive tension—all mechanisms of Complex Adaptive Systems (CAS) dynamics (Uhl-Bien et al., 2007). Enabling can be supported by improvisation (Van Kemenade, 2020), by simple rules (MacIntosh & MacLean, 1999) and creative dialogue (Bäcklander, 2019; Van Kemenade, 2020).
Sharing needs (Eenheid smeden)	Values act as organisers or attractors of disorder (Dolan et al., 2000). Reaction from CAS: shared values (Van Kemenade, 2020), having a philosophy to share (Imholte et al., 2019).
Dreaming the future (Dromen)	The reaction by visionary leadership (Van Kemenade, 2020). Leadership Synthesizes Overlapping Models & Identities (Hazy & Uhl-Bien, 2013). Sense-making from patterns and symbols (Lichtenstein & Plowman, 2009; Plowman et al., 2007; Yezdani et al., 2015). Open innovative strategy (Poutanen et al., 2016).
Interacting by diverse and interdependent actors (Uitwisselen)	Leadership Orchestrates Individual, Group & Intergroup Connections (Hazy & Uhl-Bien, 2013). Cultivated participation, interaction and influence between individuals across all levels of the organization (Yezdani et al., 2015). Interaction by diverse and interdependent actors (Van Kemenade, 2020). Multi-actor governance brings together people with diverging, often conflicting perspectives on problems, possible

	solutions and suitable courses of action (Craps et al., 2019).
Context sensitivity (Snuif de context op)	Self-organization of the system parts (e.g. the possibility to organize and re-organize according to swiftly changing environmental conditions) (Poutanen et al., 2016). Reaction from CAS: Self-organization and context sensitivity (Van Kemenade, 2020, 2021).
Adapting (Aanpassen)	Adaptiveness (e.g. ambidexterity, or balancing between exploitation and exploration) (Poutanen et al., 2016; Uhl-Bien et al., 2007). Adaptivity can be supported by bottom up (Horvat & Filipovic, 2018), informal communication (Van Kemenade, 2020) and by feedback (Lichtenstein & Plowman, 2009; MacIntosh & MacLean, 1999).

CASE STUDY

This section pictures the evolution of the Finance course of the master programme of Integrated Care from Utrecht at a Dutch university during the period 2017-2021. The story starts with the design and structure of the course and its assignment in 2017. This Finance course was the fourth and final step in a trajectory design. The first step in this trajectory was a problem analysis. After thoroughly investigating the problem, the second step contained the design of an innovation as solution to the problem. In the third step, students were asked to determine an implementation strategy (see Figure 1). The fourth and final step consisted of a business case in which students were asked to substantiate the economic viability of the innovation.

In 2017, the course contained the basics of Finance. Much emphasis was placed on topics such as cost calculation, investment analysis and budget cycles. During the evaluation of the Finance course in October 2017, several critical remarks were made. First of all, students indicated that the course material on cost calculation was not only very difficult but also somewhat redundant with regard to the assignment. An overview of the assignments confirmed that little use was made of cost calculation models in general and the more complex ones in particular. Secondly, a growing number of students, especially those with an innovation in the context of social welfare, indicated that they experienced great difficulty with mapping all the possible revenues of their innovation within the existing formats. In particular, the so-called ‘soft’ benefits or societal benefits, meaning the benefits that were not easy to quantify and monetize, proved hard to fit in.

As a consequence, the Finance course underwent several changes. These changes were drafted by the principal lecturer of this course, and presented as proposals for improvement to colleagues and several students and alumni. The proposals sparked an iterative process of development and redevelopment. Experiments with promising concepts such as Social Return on Investment followed. At the request of students, these concepts were explained during extra lectures. Nevertheless, both the evaluation of the overall course assignments as well as the reactions during question times indicated that students experienced great difficulties in applying aforementioned concepts, prompting to new changes such as the concept of value-for-money analysis.

Aforementioned developments and experiences caused a lot of discussion among lecturers and students, culminating in the question whether the final assignment of the Finance course, and as a consequence the course itself, was based on the proper concept of value. After all, during the whole master program the question ‘what value is offered to the client?’ was dominant. How did the concept of value in this question relate to the concept of value as depicted in the Finance course? The concept of value had to be stretched in order to be able to account for the so-called ‘soft’ values that were hard to quantify and even harder to monetize.

A first step was to highlight a new possibility to demonstrate whether an investment was viable or not. Besides already available concepts such as payback time and net present value, the possibility to draft scenario analyses was presented (see Table 3). Students proved to be quite able to reason cause and effect relations although academic research on that particular relation was not (yet) available. Nonetheless, in order to substantiate these relations, students consulted colleagues and health care professionals with relevant experiences. Based on these field findings, students drew up scenario analyses.

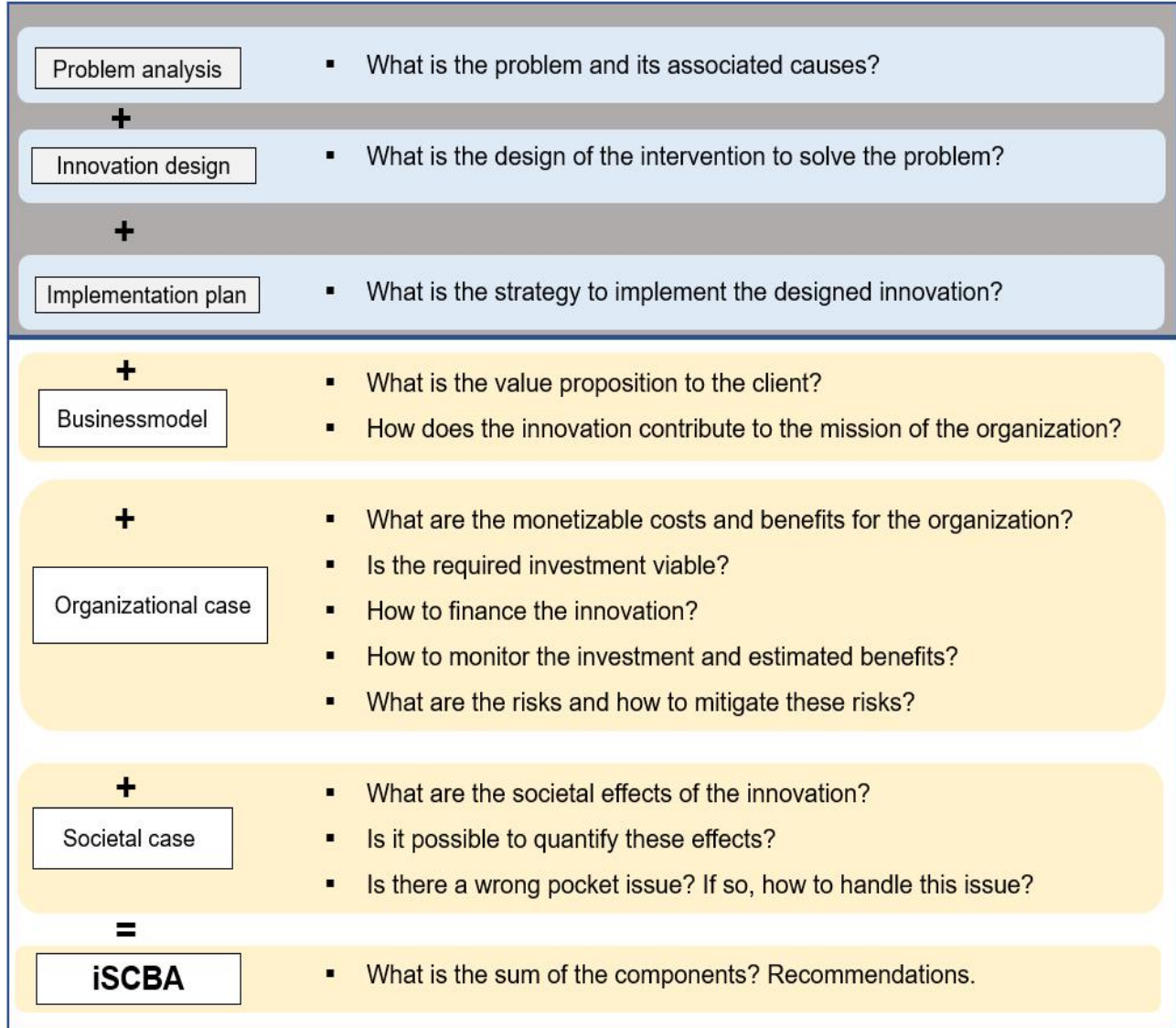
Table 3: An example of scenario analysis application

A more optimal transition process of patients from an intensive care unit to a nursing department reduces the change of Post Intensive Care Syndrome (PICS), a cause-effect relation which is extensively demonstrated in research literature. At the same time, it is reasonable to assume that with the reduction of PICS, the overall average length of stay in hospital of this category of patients might reduce as well. This second effect is not demonstrated in research literature (yet). By describing different scenarios in which this reduction in length of stay is presupposed, the corresponding cost savings can be calculated. By comparing the investment in the innovation with the cost savings of the various scenarios, a first impression on the feasibility of the investment glimmers.

The second step was to explicitly add a societal case as part of the final assignment. In addition to the business case, students were asked to reflect on all possible societal effects amongst stakeholders. With the help of a pain and gain analysis, all these effects were not only listed but also allocated to the corresponding stakeholder. This distribution of pains and gains among the various stakeholders showed who profited most and who bore most of the costs. In the case the distribution of costs in relation to the benefits proved to be skewed, this analysis offered the possibility to discuss a redistribution and co-financing of the costs.

Aforementioned steps and corresponding discussions among lecturers and students led to the iSCBA concept as the new framework for the Finance course (Figure 1).

Figure 1: Indicative Societal Cost-Benefit Analysis (iSCBA)



In the academic year 2020-2021, the new content of the course was presented to students for the first time. The comments, both during the course and in the evaluation afterwards, were encouraging. First of all, students welcomed the societal case as a welcome opportunity to highlight the benefits which were hard to quantify, herewith counterbalancing the organizational case, in particular, when the monetizable benefits did not cover all the costs of the innovation. Moreover, several students explained that the iSCBA proved to be a convincing tool in the deliberations with decision making colleagues.

FINDINGS: EMERGENCE OF A NEW COURSE

When we compare the case with the eight attributes mentioned in table 1, the course has been developed in a close interaction and synergy between the three core lecturers, the lecturers

of the other courses in the domain of management sciences and last but not least the students (attribute 1). The interactions occurred in synchronicity (attribute 2). The whole of what came out of the development process could never have been achieved by any of the participants individually (attribute 3) The results cannot be allocated to any of the participants (attribute 4). The outcome was unpredictable (attribute 5) and unexpected (attribute 6). The main goal of the Finance assignment, namely to assess whether the proposed health care or welfare innovation was viable from both a business and a societal perspective, was elaborated in accordance with the broad perspective of the new design of the course, resulting in syntheses which included unexpected aspects. This was no planned change (attribute 7). The new course can be considered a coherent pattern and irreducible to the separate parts. Based on a broad concept of value, the combination of the selected components, as depicted in Figure 1, resulted in an innovative approach (attribute 8). So, the development of Finance course in the curriculum of the Master Integrated Care Design can be considered to be an example of emergence.

Also, the leadership that made the iSCBA content of Finance emerge is an example of emergent leadership. The Medusa principles (Van Kemenade, 2021) can be discerned in the development process of the course. First of all, leadership needs to enable the self-organisation of the participants responsible for the results by giving the possibility and trust to each other to create something new in interaction with each other. An instrument to enable emergence is creating simple rules. In the case of the iSCBA there were little and simple rules. Besides the limitation in number of lectures, study load and practical circumstances, the lecturers involved enjoyed complete freedom to improvise and design the course (principle 1).

The next facilitator is having shared needs. Uhl-Bien & Marion (2009, p. 642) state that “shared need” is different from traditional leadership approaches that focus on a “shared goal” or “vision” in that it does not require agents to hold the same goal or vision. Rather, it recognizes that in collaborative efforts, partners often do not share the exact same goals but instead have personal needs that can best be satisfied by working together. In this case, this facilitator was present in the fact that during the design process, no doctrines were formulated and that everyone’s ideas were incorporated as well as possible (principle 2).

Emergence requires a dream. In the case of the iSCBA the lecturers did have a common wish to create a new course that fitted the needs of the students and the society and wanted to cooperate to make this happen. This dream sparked enthusiasm and urgency (principle 3).

Emergent innovation requires the creation of continuous interaction. In this case, it was the feedback of students that time and again prompted the review of the Finance module, opening new perspectives to improve the course content (principle 4).

Emergent innovation requires context sensitivity. The new iSCBA design was discussed with the colleagues of the other courses in the domain of management sciences. The reason for this was to get feedback on the content on the one hand, but on the other hand to adjust the iSCBA design in line with the content of the other courses in the section management sciences, such as Strategy & Policy, Implementation & Knowledge Management and Change Management (principle 5).

The last facilitator for emergence is the ability of the leadership to adapt. In this case adaptivity was for instance shown by the continuous processing of feedback and the steady communication with students to check whether the course content met their needs and expectations (principle 6).

DISCUSSION AND CONCLUDING REMARKS

Theoretical contributions

Emergence

This case study is an illustration of the concept of emergence. There was interaction between internal and external elements, that occurred at the same time (synchronicity), where the whole was different than the sum of its parts, was irreducible to the separate parts, unpredictable, unexpected, unplanned and led to a new coherent pattern (the new course).

The case study can also be considered as a confirmation of the theory of emergent leadership. The emergence of iSCBA was enabled by a diverse group of people, that interacted continuously. The group shared a need for improvement, which encouraged them to develop a joint dream, culminating towards a new course. In addition, the evolving concept was continuously adapted to new insights, opinions and feedback, in particular from the students.

In addition to the last remark, the experiences and voices of students played a crucial role and contributed to the conditions for an emergent development. In fact, this case illustrates how collaborative learning of both lecturers and students, positioning the students as co-makers of this course (Saito & Fatemi, 2022), contributed to the iterative and emergent process of designing a new master course.

Societal Cost-Benefit Analysis

This case study presents iSCBA as ultimate result of an emergent development. Several signs indicate that this is a promising outcome. The first results show that this approach facilitates a context-sensitive interpretation of the analysis. Experiences of students show that an iSCBA can be useful in a decision-making process to evaluate whether the intended benefits are plausible and feasible. These experiences are in line with the findings of Pomp et al. (2014).

Feedback of students affirm that the scope of the concept of prosperity, as incorporated in the iSCBA framework (see figure 1), was sufficiently wide to encompass and to account for 'soft' values such as health and well-being. Moreover, several students mentioned that their iSCBA proved to be a suitable set-up to start deliberations with their management and colleagues. The framework also offered the possibility to provide insight into the distribution effects of the anticipated benefits among stakeholders, revealing so-called 'wrong pocket' problems, facilitating new ideas with regard to the funding of the innovation.

Practical contributions

How to balance all the unforeseen effects and developments, arising from a complex network of interacting actors or participants? The question relates to the mainstream 'in control' concept. This 'in control' thinking assumes a sequence of rational steps that have to do with planning and monitoring, enabling the manager to stay 'in control'. This study however depicted a different story in which the concept emergence dominates. In fact, this study pictures processes which managers can only partially control. Streatfield (2001) calls this 'the paradox of control'. He states that managers "have to live with the paradox of being 'in control' and 'not in control' simultaneously" (Streatfield, 2001, p. ix) . According to Streatfield, managers have to handle the

anxiety of being ‘not in control’ by fully participating within the network relations, being part of the process of emergence. As a consequence, managers should focus less on the concept of ‘in control’ – acting from a functionalist perspective on organizations as rational and manageable entities – and more on the ‘in charge’ concept instead – acting from the perspective on organizations as social and relational processes of human interaction (Streatfield, 2001). In fact, this ‘in charge’ concept fits the plea of Woods to reinforce the social and dynamic potential of leadership (Woods, 2016).

In addition, the case description shows how the concept of emergent leadership (Van Kemenade, 2021), which comprises aspects of concepts such as ‘in charge’-management (Streatfield, 2001) and distributed leadership (Jäppinen & Sarja, 2011; Woods, 2016), proved to be beneficial in educational practice. Due to the praxis of emergent leadership and the corresponding collaborative practices, both lecturers and students strengthened their commitment in the design process of the Finance course which as a consequence contributed to the efficacy of this course.

Conclusion

The development of the Finance course with the indicative Societal Cost-Benefit Analysis as final content, was unexpected and unplanned, producing an outcome that surpassed the sum of its separate parts and the result of an interactive combination of deliberations, feedback loops and tuning between both lecturers and students. In short, this process bears all the hallmarks of emergence. Moreover, the presented case study describes how this process of emergence in combination with emergent leadership led to a practicable and encouraging outcome for all stakeholders involved, setting a novelty and an example that might be worth following.

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