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Moving to design-based education in hotel management school: proof of success and beyond — a research journey

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ABSTRACT: NHL Stenden University of Applied Sciences adopted the innovative educational concept design-based education (DBE) in 2018. The Hotel Management School is one of the programmes that introduced a DBE curriculum. It is important to explore to what extent DBE is successfully implemented and to monitor the long-term impact of DBE on students, lecturers and the industry. The purpose of the current article is to position a longitudinal research journey in which stakeholders' personal and social experiences and perceptions are the starting point for the research focus. Using educational design research, the current research aims to contribute to the four intended impact areas: knowledge, personal development, system development and product development.

KEYWORDS: accompanying research, design thinking, educational design research, game changers, hospitality management education, innovative education

Introduction

NHL Stenden University of Applied Sciences is an international multi-campus university with over 24 000 students, offering associate, bachelors and master's degree programmes across 14 academies. The university's ambition is to help students become inquiry capable, critical, innovative, reflective and 'worldly-wise' professionals who work collaboratively across the boundaries of their own disciplines. In order to achieve this ambition, the university adopted a new educational concept, design-based education (DBE). Each programme is required to develop a DBE curriculum.

DBE is an innovative learner-oriented approach to teaching and learning that supports students as they learn to cope with the real, complex and rapidly changing world. DBE is based on self-directed, contextual, constructive and collaborative learning principles (Assen, 2018; Geitz & Sinia, 2017). It empowers the methodology of the trialogical learning process between education, research and industry. DBE enables students to align their learning processes with complex real-life issues offered by and derived from the international professional hospitality industry (Geitz & Sinia, 2017) and to direct their own learning processes. These real-life issues are the starting point for learning. Students learn collaboratively in so-called "ateliers" (open physical and virtual learning spaces), via iterative design thinking processes, to construct meaningful and innovative solutions for the issues. The university identified multi-disciplinary collaboration, the international and intercultural context, design thinking, personal leadership and a sustainable education as key aspects of DBE (Bakker & Sinia, 2019).

Hotel Management School

The Hotel Management School (HMS) is one of the university programmes that started with the development and implementation of DBE. After more than 30 years of experience with problem-based learning (PBL), Stenden HMS adopted the new DBE educational concept. Although PBL and DBE share the same fundamental learning principles of being self-directed, contextual, constructive and collaborative learning (Assen, 2018), the transition to DBE asks for stakeholders to change to another "mode of thinking" (Postareff et al., 2007).

The mission of HMS is to assist students to become future proof game changers in the global hospitality industry and beyond. Game changers strategically anticipate change and have a positive impact on tomorrow's world (HMS, 2020). The HMS premises include atelier spaces sponsored by industry partners to visualise our rootedness in the real world. Ateliers are learning and working spaces where students, lecturers and industry professionals come together on a regular basis. Students work on interdisciplinary complex real-life hospitality industry issues, the so-called "design challenges". In the first year, the commercial on-campus training hotel Notiz Hotel and restaurant Wannee offer these challenges. In the second and third year, the challenges are also offered by external industry partners and, in year four, students work on managerial challenges during their internships to prove their professional competences.

Students, lecturers and industry professionals have various roles in DBE. The role of students in DBE is to construct knowledge with others. In DBE, students are expected to become active learners who construct knowledge collaboratively with other students, educators and industry professionals in ateliers

(Assen, 2018). Lecturers take the role of *facilitator* and *activator* of students' individual and collaborative learning processes. In an atelier, the facilitator engages, encourages, motivates and challenges students to apply various learning strategies to solve the design challenges. In a homegroup, the activator creates a safe learning environment where students feel comfortable to voice their views and concerns. Activators support students to evaluate and reflect on learning processes either individually or collaboratively. In addition, the activator and facilitator provide students with timely formative feedback on their personal and professional development. As experts, lecturers provide knowledge and skills which are supportive to create appropriate solutions for design challenges. These so called "expert sessions" are provided just in time and on demand. Industry professionals present real-life design challenges, provide feedback and are partners in the learning process. Students engage with industry partners to further explore the practical elements of the design challenge and seek inputs towards sustained solutions.

DBE would be mainly offered on campus, at the faculty – if it were not for COVID-19. In February 2020, around 100 first-year students started with DBE, followed by a cohort of around 600 students in September 2020. Unfortunately, five weeks after the start of the programme in March 2020, all educational activities turned into online education due to COVID-19. In September 2020, a larger group of new students encountered a blended programme. Ateliers were partly offered on campus and online, with all other educational activities online.

Research journey

To achieve high-quality education, each university programme is required to demonstrate successful implementation of DBE (Bakker & Sinia, 2019). Therefore, it is pivotal to explore and understand what HMS intends to attain with DBE (intended curriculum) and what they deliver and realise with DBE (implemented curriculum). In other words, does the HMS "do what it should do?". Hence, it is worthwhile to monitor the long-term effects and implications of DBE on students, lecturers and industry professionals.

The purpose of this article is to present our longitudinal accompanying research (AR) project at the HMS which started in September 2020. According to the principle of trialogical learning, we follow the DBE development and implementation process in close contact with all stakeholders. We follow the transfer of the new educational concept and policy into practice, its outcome as well as drivers and constraints for success – to further curriculum innovation and to inform policy decisions on educational quality assurance.

The article is divided into three sections. In the first section, we open a window (Gottlieb, 1981) onto multiple stakeholders' perceptions and expressions involved in the DBE curriculum in February and September 2020. The presented narratives attempt to uncover their personal and social experiences and impressions of the DBE curriculum. The narratives describe the current situation and inform our research focus. The second section elaborates on our vision of how research can contribute to successful implementation of DBE. Finally, the third section explains the rationale, design and goals of this research.

Narratives experiences of DBE at the HMS

What follows are narratives of DBE experiences from students', lecturers' and industry professionals' perspectives. Interviews with stakeholders and evaluation reports are used to develop the narratives. We invite the reader to look through the window that sheds light on different realities. The window opens a new context, to the new ateliers, and through the windows we shed light on the first steps into DBE. It provides reflective moments for learning.

Students' narratives

Studying in a DBE learning environment is a joyful though shadowed experience. Students feel excitement and uncertainty as two sides of the same coin: interesting learning opportunities, on the one hand, and tension about proper performance in an educational experience that is totally new to them, on the other. They appreciate the connection of learning with real-world operational and managerial hospitality issues – no longer is learning separated from what their hearts beat for, from their passion: the hospitality practice. *Learning is no longer just from a book, and that is what I like*, says Bella. And Nika experienced *that we learn without noticing it*. They are enthusiastic about creating ideas and feel valued as innovators, though in this regard, Vincent raises an interesting thought that goes along with his positive evaluations: *It is great to work on a problem within the school, but sometimes I have the feeling that they make use of us to optimise the school or procedures within the school and that doesn't feel always right*.

Students see opportunities to develop competences needed in their future professions in hospitality: responsibility, flexibility, perseverance, delegating, teamwork, communication with the client and team members, finding own ways to become knowledgeable, the importance of doing research before acting, and starting to think for oneself and learn that one's own ideas can be challenged and replaced by better ideas. It is combined with struggle: it is not easy at all to *take the driver's seat position* (Remco), to become self-directed. Struggling with peers with different motivation levels, engagement and maturity, and struggling with feedback given by lecturers and industry professionals were some of the struggles encountered. Tom, for instance, felt uncomfortable about the *sort of cryptic answer* he received from a facilitator to *decipher* [an answer] *for yourself*, about experts answering emails too late or giving contradictory feedback. Tiemen thinks that *teachers do not always understand what you are asking and even though you think it is a pretty easy question*. Moreover, Vincent felt confused that the client started to ask about the possible profit coming from the idea while *we were talking about efficiency in the housekeeping department*.

Isis respectfully comments on the position of lecturers and industry professionals when she states that *I heard that the experts had the same questions as we are now coping with*. But, at the end, what counts is that *we pass*, and it is the lecturers that decide scores on professional products, defending of assignments and accountability reports. Despite partnership in real-world learning, much appreciated staff support and own responsibility for learning, a *power relation*, as Tim says, cannot be disregarded.

Atelier facilitators' narratives

Atelier facilitators experience the interaction in the atelier sessions as positive. The energy level and commitment of students while working on a real-life issue is clear for all to see. Initial apprehensions are overcome as the facilitators get oriented on the job to the practical work in the ateliers. Facilitators witness the DBE educational approach in real life and feel more confident after the first period. The atelier sessions are viewed as flexible and student owned, making them more suitable for the varied set of student interests and goals. The sessions allow for students to work collaboratively and learn in a socially rich set-up. This allows for ideas to be built and the transfer of knowledge. As shared by one of the facilitators, *students' own input and creativity are increased*. The support and collaboration from atelier coordinators are highlighted as key contribution factors to managing work outcomes.

Facilitators remark on improvement points for themselves in the new roles and share an uneasiness in regard to managing student expectations as they move through the ateliers. Facilitators experience that students' focus on researching the problems is limited, and this becomes a drawback in their work together. Several design challenges were not seen as supporting students' learning and others were viewed as lacking definition and scope. Having very few physical atelier sessions, the facilitators suggest considering the impact of the online environment and administrative tasks on their preparation time and workload for atelier sessions. Several facilitators, managing up to three atelier groups, find their connection and rapport with students being restricted, as illustrated in the following comments: *It was not just about understanding and getting in charge of the DBE process and each week's content for my first time, or the new time-consuming online environment that we have to cope with, but it was about the workload itself as well*.

Activators' narratives

I enjoyed the flexibility that it [the activator role] *has offered the students as well as the ownership of their learning destiny*. As most activators find their way around the new curriculum along with the students, the practical need of the diverse student groups for an activator seems to come up. Different tracks have different needs and expectations from the regular trajectory students. As activators are also scheduled to join atelier sessions, it is viewed as helpful to observe the students working and to plan suitable conversations as an activator. Activators and students initially struggle to build an understanding of the value of the role of the activator. However, after the initial rapport and trust building, the activator role is viewed as highly supportive in the students' learning journey. The flexibility and openness in the content and coverage of the activator session is much appreciated; however, it would be helpful to identify and define core content. This would ensure even coverage of development activities across the multiple student groups.

Experts' narratives

Experts express much satisfaction and higher engagement from students when their subject expertise helps the students connect practical and theoretical knowledge to their solutions on the design challenge. This is illustrated by the comment: *I enjoyed our sessions and many students gave me a quite positive feedback about them. I tried to apply theory into practice as much as I could per group, and I am happy that the students appreciated it*. Compared to the old curriculum, experts find themselves reaching out to fellow colleagues for their expertise to ask for support and suggestions. This is supportive and helps align the work of several colleagues on the same subject expertise.

As shared by an expert, *the starting point about the role of the expert was not clear for both the expert and the students*. Experts experience inconsistent and sometime contradictory descriptions of their role in the new curriculum. They perceive a decline in the value of their subject expertise. The reduction in interactive moments with the students in the new curriculum compared to the old curriculum is shared as a reason for concern. Specifically, experts find it difficult to engage students during the online sessions. Sessions are sometimes experienced as non-productive due to large groups of students and a limited time for interaction. Experts find that the "lecture format for all" is not in line with just-in-time and demand-driven sessions. As shared by a participant, *there is lack of interaction from the students and few questions from their end. I am still struggling with how to work on implementing DBE and not teaching, while students do not know what to ask for*. Additionally, experts find that only a handful of students are highly active through the whole session online and several just leave the class as they feel the topic is not interesting for them or it has no test/assessment attached.

Industry professionals' narratives

DBE also requires a different approach from on-campus industry professionals. The changing role of those staff is reflected in the change of their job titles from practical instructors to practical facilitators. They are expected to provide students with real-life design challenges. Instead of instructing students, the focus is now on facilitating students' learning processes and supporting students to develop professional products related to their design challenges. The practical facilitators are aware that they are a critical factor in the success of the DBE concept. In addition, facilitators are expected to promote the link between education and practice. They are expected to connect with atelier facilitators. Practical facilitators experience the change in their role as both a motivating and a challenging task. They perceive DBE *as a radical implementation*. Although facilitators perceive that students have a lack of understanding of DBE aims and purpose, they experience that students are much more motivated and curious than students in the old PBL curriculum. In DBE, students are more enabled to integrate theory and practice. Facilitators receive many more in-depth questions about the design challenges and therefore they are involved in the development of solutions for these challenges. For instance, facilitators participate as assessors when students present their prototypes. In other words, facilitators feel more connection between theory and practice.

Most practice facilitators experience the connection between theory and practice as very positive; however, this connection also causes an increased work pressure. The work pressure is for three reasons. Firstly, the way the scheduling and organisation around the deployment of students has changed. Students no longer spend two weeks in a row in a practice department of the on-campus training hotel. Instead, they are only in the department for one or two days in a row. This makes it more difficult to build up a bond and gain insight into the student's development. Consequently, industry professionals perceive

that students feel less connection with the department. Therefore, the distance between practice facilitator and student seems greater than before. Secondly, helping students to solve design challenges from practice requires other skills than instructing students in practice. Facilitators find it difficult to motivate students to construct knowledge without the facilitators' instruction. The following statement of a facilitator indicates the "struggle" of facilitators: *When students ask a question, they expect an answer and not a (counter)-question. I see that students then become restless*. In addition, as one of the facilitators mentioned: *I have no time to answer all the questions of students*. As a response, the learning and development department of the hotel organised expert sessions in which information and instructions are provided. Thirdly, the lack of calibration between atelier facilitators and practical facilitators is perceived as a concern, specifically, the communication between atelier and practical facilitators along with the assessment method. In addition, the assessment role is a source of increased work pressure for the practice facilitators.

The above stakeholders' narratives enable appreciation and awareness of the challenges and successes that accompany the implementing of DBE. The narratives show that change is like a bumpy road paved with pleasure and inspiration accompanied with abundant questions and encounters with one's professional shyness to act (*handelsverlegenheid* in Dutch). Although DBE and PBL are both based on the same learning principles (self-directed, contextual, constructive and collaborative learning), it seems that DBE requires adjustment in actions from students, lecturers and involved industry professionals. The narratives demonstrate that, although stakeholders appreciate DBE, they struggle with their role. It seems they feel a discrepancy between the desired outcomes and the realised outcomes of the implemented DBE curriculum.

Implementation of DBE: Proof of success and beyond

Proof of success is essential to further innovation, to monitor the quality of implementation, and to contribute to informed quality control, accreditation and public funding of educational programmes. The decision on how NHL Stenden programmes produce evidence is left to the different programmes. This gives us as researchers and lecturers the opportunity to design a practice-based research project supportive of the envisioned Stenden HMS learning and working environment and culture. We follow a plea for "slow research" by former NHL Stenden Professor of Sustainable Educational Concepts, Gerry Geitz (2020). She emphasised holistic and dialogical investigations of curriculum design and practice within the context of explicated intended outcomes. This would avoid quick interventions as it aims at non-judgemental sensemaking insights in the practice and impact of the design as well as constant monitoring of educational quality. We believe that slow research moves beyond a managerialism-based "what works" research focus (Biesta, 2010a; 2010b; 2019) – rather common and expected by third parties.

In a large historical review study on implementation research into education innovation, Century and Cassata (2016) identify five clustered reasons for researching innovation:

(1) "inform innovation design and development";
(2) "understand whether (and to what extent) the innovation achieves desired outcomes for the target population";
(3) "understand relationships between influential factors, innovation enactment and outcomes";
(4) "improve innovation design, use and support in practice settings"; and
(5) "develop theory" (p. 174).

They notice that "fidelity of implementation" while looking into successful implementation of intentions, and research "*describing implementation as conducted*" (p. 190, emphasis in original) investigated with quantitative measures and analysis methods which prevail in implementation research. These quantifying approaches, justified with the assumption to produce objective scientific evidence needed for governmental and institutional policy making and school improvement, however, is not without bias (Gopalan et al., 2020). Century and Cassata (2016) problematise these quantifying approaches because they seem to ignore complexity and "wickedness" (as in "wicked problems") that define innovation in education. Therefore, they propose new ways to investigate the implementation of education innovation stating that "[n]ew innovation designs and associated analytic approaches that accounts for this complexity may provide much-needed insight into what it truly takes to realize lasting educational change" (Century & Cassata, 2016, p. 203).

Considering the above, we decided that our research project must contribute to both policy and practice from a constructive dialogical and sometimes dialectic perspective to further our curriculum innovation. The research should have a well-balanced design with well-chosen (quantitative and qualitative) methods to create added value, acknowledging the needs of stakeholders and their participation, the complexity of the innovation, and the specific features of the new educational concept. Therefore, the project must strengthen the conceptualisation of the learning principles underpinning the DBE educational vision and deliver practice-based theoretical support for sustainable DBE implementation. In addition, the project should deliver managerial information on organisational performance regarding successful implementation. To prove successful implementation, observable and measurable indicators are needed to identify to what extent students (stakeholders) develop themselves as inquiry capable, critical, innovative reflective and worldly-wise learners/professionals. In addition, the project should give space to students, lecturers and industry partners to cooperate as communities of learners. Within the communities, the learners collect shared narratives and engage in critical reflective dialogue to enable professional development.

Rationale, goals and design of accompanying research (AR)

We decided to combine the principles of accompanying research (AR) (Kämäräinnen et al., 2014; Christensen et al., 2016) with educational design research (EDR) (Plomp & Nieveen, 2013) for our project design. AR and EDR give us the possibility to conduct slow and participative research with stakeholders to meet the intended research output and contributions. On the one hand, AR is attached to "policy context" with "pilot projects or innovative initiatives" integrating "functions like process consultancy, implementation research and evaluation research" (Kämäräinnen et al., 2014, p. 5). On the other hand, AR creates "participative design process[es]" (Kämäräinnen et al., 2014, p. 7) in which researchers and a variety of participants can collaborate in designing, developing, implementing, and

researching an innovation process or product, each of them with different but supplemental perspectives. While researching and working together, collective professional learning can take place. In her research on collective learning of teams in educational innovation, Lodders (2013) concludes that individual and organisational performance and adaptability in innovation processes benefit from weaving it with social learning, with a practice in which the individual learns within the social setting of the innovating team. We expect that via AR, roles will get blurred: practitioners become researchers supported by researching practitioners moving beyond a merely reflective practitioner position. Consequently, they are entering a position of lecturers as researchers and, if possible, "transformative intellectuals" (Giroux, 1988), who are important key actors for sustainable educational innovation (De Boer, 2015). Therefore, it is important to realise that research is not just a parallel process but integrated in and decisive for the implementation process. Christensen et al. (2016, p. 130) emphasise the importance of the special AR research-practice relationship for practice improvement, arguing that the researcher

> is involved as a significant and intentional stimulator of the development of practice. Affecting the research context is approached not as a methodological problem, but rather as the whole idea behind doing the research.

Connecting accompanying research with educational design research

We think that a connection of AR with educational design research (EDR) (Plomp & Nieveen, 2013) is logical and beneficial. AR and EDR share rootedness in participatory research methodologies and EDR is aligned with the DBE approach to the curriculum. Plomp and Nieveen (2013, p. 16) define EDR in the context of development studies as

> the systematic analysis, design and evaluation of educational interventions with the dual aim of generating research-based solutions for complex problems in educational practice, and advancing knowledge about the characteristics of these interventions and processes of designing and developing them.

In case of validation studies, they define it as "the study of educational interventions with the purpose to develop or validate theories about such processes and how these can be designed" (p. 16). EDR aims at designing interventions in educational settings through iterative processes while proceeding through four consecutive phases (Plomp & Nieveen, 2013). It is process-oriented (with a focus on understanding and improving), utility-oriented (practice-driven) and theory-oriented (based on a conceptual framework) (Van den Akker et al., 2006). Furthermore, EDR has a clear user and practitioner orientation as various users and practitioners in educational settings (lecturers, students, industry professionals, management) are actively and collectively involved in the research process. Consequently, designed or developed interventions are relevant and practical in their educational context and based on a shared vision (Plomp & Nieveen, 2013).

We adopt the EDR phase-based planning to achieve results in four intended impact areas: knowledge development; system development; personal development; and product development (Greven & Andriessen, 2019). We expect that these four development areas will foster a constructive, flexible and inclusive research journey inseparable from Stenden HMS striving to implement and sustain a high-quality design-based education programme. Table 1 provides an overview of the four impact areas.

Final thoughts

In this article, we presented our longitudinal accompanying research combined with education design research and argued that research must be integrated in DBE development and implementation. The project will enable the creation of an HMS community of practice full of collective learning in which researching practitioners will improve their educational practice and professionalism while providing necessary evidence of success for policy makers.

Complexity and dynamics characterise the start of curriculum and research implementation. Despite our long-standing tradition in the social constructivist problem-based learning approach to the curriculum, the turn to DBE comes with challenges. We opened a few windows to the initial experiences of stakeholders in their new roles. We are hopeful that our research unfolds multifaceted narratives about DBE development and implementation and the learning of its stakeholders. The intended curriculum as presented in policy documents and the implemented curriculum in practice will give much food for thought and inspiration.

TABLE 1: Intended impact areas

Knowledge development	System development	Personal development	Product development
Researching	**Changing**	**Learning**	**Designing**
The impact of theoretical support for sustainable DBE. It includes critical exploring and strengthening of the learning principles underpinning the educational vision for DBE; exploring students' learning and well-being; exploring lecturers' and industry partners' experiences and perceptions. As a result, effective, observable and measurable indicators could be identified.	The impact on the way system development could be structured and on rules, regulations, policies and ways of working. The information regarding organisational performance might lead to changes in the systems (curriculum design, facilitation strategies, learning outcomes etc.).	Through an inquisitive dialogue, stakeholders' social learning takes place. Practitioners develop a shared vision of DBE and based on this vision design appropriate interventions for an optimal learning environment, learner experience and well-being.	The impact on product development refers to concrete output of this research (guides, tools for students, educators and industry professionals) that support creating an optimal DBE learning environment.

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