3 The Intervention in the School-In Innovation

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In chapter 2, we gave an overview of the innovation and the organisation of the project. In this chapter, the theoretical and empirical considerations related to the intervention in the project are highlighted, with the School-In innovation being presented as a framework for the intervention conducted. The relationship between *innovation* and *intervention* is described and discussed, focusing on drivers and barriers for the process. How the innovation was developed and performed is also presented and discussed together with implications for further research.

3.1 Innovation and innovation research

Innovation is a concept whose meaning is increasingly varied; it is most commonly linked to the private sector, referring to the idea of creating better products and services. Jentoft (2017) argues that, although there are similarities in innovation processes between private and public services, there are also distinctive and important differences (Jentoft, 2017). Research shows that the public sector has different goals, purposes, and institutional cultures, as well as longer chains of implementation, other responsibilities, and formal procedures that provide different conditions for fostering innovation (Hartley, 2005; Moore, 2005; Robertson & Seneviratne, 1995; Damanpour & Schneider, 2009). In Norway, the goal is to promote innovative capacity and create a culture of innovation in the public sector, and to achieve this, political and administrative support is critical according to research (Borins, 2002; Hartley, 2011; Moore, 2005). The importance of innovation research is one of the reasons why the Research Council of Norway (RCN) started an innovation research strategy to help research communities play a more significant role in developing a more knowledge-based and innovative public sector.

This innovation programme illustrates the purpose of the RCN strategy by emphasising the need for more knowledge on the prerequisites and antecedents of innovation and for learning more about how to implement new solutions in the public sector. The Research Council of Norway realises that numerous well-regarded educational and research communities target public sector responsibilities. However, many people in the public sector experience that research efforts do not respond to the knowledge needs of municipal, regional, and state actors. Many public actors fail to use research results that could have been useful and relevant. The Research Council of Norway

would like to contribute to the research generating greater social effects by providing research communities with framework conditions that stimulate collaboration with the public sector. The Research Council of Norway asks for larger joint projects across municipalities, sectors, and directorates, with the active participation of Research and Development institutions, to ensure transparency of processes and results and to facilitate better proliferation (RCN, 2018–2023). One important part of this programme is that innovation should be based on questions from the public sector. As described in the previous chapter, the project School-In came about as a result of some municipalities in southern Norway seeking to continue their efforts on 'Inclusive Learning Environment' (Knutepunktet Sørlandet, 2015) and to reinforce these efforts via research conducted by researchers from the University of Agder. In the following section, theoretical and empirical considerations related to the innovation are presented.

3.2 Theoretical and empirical considerations related to public sector and school innovation

Our considerations are based on previous research (De Vries, Bekkers, & Tummers, 2016) and theoretical and empirical considerations from a Norwegian perspective. The local and contextual considerations were important in our project because we wanted to take the need for a cultural understanding of innovation seriously (Garmann Johnsen & Pålshaugen, 2013a). Even though innovation research is increasing, the number of reviews on public sector innovation centred on education is still limited (Jentoft, 2017). Our argumentation in this respect is based on a systematic review of innovation in the public sector, which included 181 articles and books published between 1990 and 2014 (De Vries et al., 2016) and research reports on innovation in schools with different perspectives. In their review of public sector innovations, the researchers used five analytical questions related to the following topics: (1) the definitions of innovation, (2) innovation types, (3) goals of innovation, (4) antecedents of innovation, and (5) outcomes of innovation.

Based on this analysis, they recommended three approaches to future research: (1) more variety in methods: moving from a qualitative dominance to using other methods, such as surveys, experiments, and multi-method approaches; (2) emphasise theory development and testing as studies are often theory-poor; and (3) conduct more comparative studies, for instance by linking different governance and state traditions to the development and effects of public sector innovation (De Vries et al., 2016). The recommendation of increased variety in methods and designs to allow comparative studies was an important aim for project School-In. We also argued for the need for theory development on inclusion at the system level (Göranson & Nilholm, 2014), aiming to test the theory on the local connections of the schools (Horrigmo, 2015; Horrigmo & Midtsundstad, 2020) and how expectation structures develop and can be changed (Midtsundstad & Langfeldt, 2020; Dalehefte & Midtsundstad, 2022).

These considerations have influenced the answer to the five analytical questions posed in the review. In the following, these five questions are used to make our theoretical considerations transparent and possible to evaluate. We start by defining the innovation and go on to describe School-In's innovation type, our goals, and the antecedents we considered, before highlighting the outcomes we were hoping to see from the innovation. For each of these topics, the Norwegian model of innovation will be part of the discussion.

3.2.1 The definitions of innovation

In the public sector, innovation as a concept is seldom defined, and if it is, a general definition is often given, without reference to the boundaries of the concept (De Vries et al., 2016). It is important that a definition include the difference between the distinctive nature and challenges of innovation on the one hand and 'continuous' change on the other (Osborne & Brown, 2013). The concept of innovation is often used in a sense similar to 'reform' (Garmann Johnsen & Pålshaugen, 2013a, p. 13), but can be distinguished from reform in that reforms are expected to initiate change, whereas innovations are expected to create newness. The Latin concept 'innovare' means to renew or create something new (Garmann Johnsen & Pålshaugen, 2013a). It has also been argued that a definition of innovation can be too literal and narrow (Garmann Johnsen & Pålshaugen, 2013a). Instead, it may be more fruitful to describe the characteristics and boundaries of the specific innovation.

School-In was an innovation project aiming to develop an inclusive learning environment by focusing on the impact of expectations in terms of changing school culture. The intervention took the relevant school as its starting point by mapping the school's expectations structures to initiate a process of changing the school culture. Its boundaries were confined to the seven participating schools, but the comparison between these schools and the six control schools gave a picture of how innovation can create change and newness in different contexts. The intervention focused on the working methods in the innovation to investigate if these methods provided opportunities for change in different contexts. In addition, the innovation had a triple helix (figure 2.1. in chapter 2) approach, allowing an investigation into how the patterns of cooperation between the public sector, academia, and Educational and Psychological Counselling Service (PPT) can develop and influence the cooperation between the systems or create new systems for cooperation (Garmann Johnsen & Pålshaugen, 2013b).

3.2.2 The innovation type

Innovation in the public sector usually varies between *process innovation*, *administrative process innovation*, *technological process innovation*, *product or service innovation*, *creation of new public services or products*, *governance innovation*, and *conceptual innovation* (De Vries et al., 2016). Past research has argued that distinguishing be-

tween types of innovation is necessary for understanding organisations' innovative behaviour because organisations have different characteristics. Innovation adoption is not identically affected by, for instance, organisational antecedents (Walker, 2014). The project School-In combined several of these approaches, but can be characterised as a *process innovation*, based on the process that took place both internally in the individual local schools and in relation to the research cooperation (Triple Helix). In the Norwegian model of innovation, it is recommended to distinguish between (1) factors that trigger or create innovations, (2) processes that facilitate and develop innovations, (3) factors that stimulate and lead to the implementation of innovations (Garmann Johnsen & Pålshaugen, 2013a). These elements draw attention to the fact that the innovation was both a locally based and an employee-driven process innovation – two important aspects of the project. These two aspects will be explained further in the following sections using educational research and cultural characteristics to explore the antecedents of innovation research. First, we present the goals of the School-In innovation.

3.2.3 The goal of the innovation

Researchers and policymakers seldom specify the goals of public innovation research, but the goals that have been mentioned are mostly associated with increasing effectiveness (De Vries et al., 2016). In educational research, this is often related to improving school results and increasing students' possibilities to learn (Fullan, 2010; Greany, 2018) – aspects often referred to as academic goals rather than social approaches. Innovation goals can also be linked to the innovation itself and factors that trigger, facilitate, and stimulate innovation implementation, as described above.

School-In was a type of process innovation focusing on three main areas: (1) *Mapping of expectation structures that constitute the foundation of school culture* (chapter 2). The mapping was used as a trigger to start the process of changing school culture by using this mapping to legitimise the innovation process. (2) *Change in school culture as a result of collective expectation structures in the school organisation* (chapter 2). This involved exploring how to change the school culture through changing the school organisation's ties to the local community. Local support or lack of process support is a main topic for discussions on public innovation in the Nordic countries (Garmann Johnsen & Pålshaugen, 2013a), and is also important for local school development (Midtsundstad, 2019). Consequently, the project aimed to explore the potential impact of locally anchored school development on the ability of the school to change and implement new knowledge. (3) *Implementing new expectation structures in schools and support systems* (chapter 2). Thus, the project aimed to explore how teachers' participation in work to create change can enable the development of collective capacity for inclusion. The project goal was to find answers to the research question: How can awareness of and change in the expectation structures of schools contribute to an inclusive school culture *rooted in the local community?*

3.2.4 The antecedents of innovation

Antecedents identified as influential in innovation processes have been explored in innovation research – 'antecedents can, depending on their level and the specific context, be either a driver or a barrier'. For instance, learning cultures favouring innovation, as well as organisational cultures, have been highlighted in several studies (De Vries et al., 2016). The antecedents have been categorised into drivers or barriers that relate to four main categories at four levels: (1) *community level*: external context; (2) *organisational level*: aspects that include the structural and cultural features of an organisation; (3) *innovation level*: triggers and resistance to new knowledge and realisation of the innovation; (4) *interaction/employee level*: characteristics of colleagues – individuals who innovate (e.g., empowerment). These drivers or barriers can be culturally defined and, in our project, four topics stood out: (1) *local place – connections/structures;* (2) *meaning – understanding;* (3) *learning in interaction – structures for learning;* and (4) *measures*. In our project, we focused on expectations as drivers or barriers. These antecedents are presented in table 3.1. and explored further in the text below.

Table 3.1: Antecedents as drivers or barriers in the project School-In

	Community level	**Organisational level**	**Innovation level**	**Interaction – employee level**
Local place – connections/ structures	Expectations from the administration and the local neighbourhood – parents, youth organisers, etc.	Perceived expectations from school leaders and employees	Internal and external structures for using new knowledge and applying it in different contexts	Internal and external expectations perceived as support or resistance
Meaning – understanding	School owners, e.g., strategies for communication expectations internally and towards the local community	School leaders' communication of legitimacy of new knowledge structures for co-creation	Accepted as important at different levels	Perceived as relevant and useful in everyday schoolwork or not
Learning in interaction – structures for learning	Expectations for learning from each other at different levels. Structures of learning through connections with local communities	Structures of learning from each other at different year levels in the school	Structures for learning from each other at different levels in the innovations of different groups	The personal perception of expectations for learning. Perceived usefulness of the new knowledge in their collegium and their classrooms
Measures – participation	School owners, PPT, and school leaders can use the measures in their different organisations	School leaders, teachers, and paraprofessionals can use the measures at all year levels for 1st–10th grade	The measures apply or do not apply to different innovation levels	The measures are useful and make everyday schoolwork easier or more interesting; self-efficacy increases

*PPT: Educational and Psychological Counselling Service

This table is intended to explain the relationship between *innovation* and *intervention* in our project, since the two concepts are often used without clarifying the difference. In our project, all four levels represent the innovation, but the difference is evident from the table above, with the (1) community level and (3) innovation level representing a special focus on the innovation, and (2) organisational level and (4) interaction – employee level, representing the focus on the intervention of the project. In the following description, the antecedents at different levels will show how the innovation and the intervention are dependent on each other. The focus of the research is the intervention in different schools participating in the project.

Drivers and barriers 1: Local place – connections/structures

Our project investigated the connection between the local school and the local community. Local support can be both a driver and a barrier for innovation and school development. How civil society includes different people in their communities seems to impact how schools can develop as inclusive learning communities (Horrigmo & Midtsundstad, 2020). This connection is not always as simple as expectations related to education; it can also take the form of expectations concerning how to include and support others in life. The local administration's support of the local school and the different communities can, therefore, be a driver or barrier for school development and school results (Horrigmo, 2015).

These local expectations are perceived at the organisational school level and create prerequisites for development (Midtsundstad & Langfeldt, 2020). The perceived expectations from leaders and employees in school determine whether or not schools experience support and trust, and influence the courage and skills of schools with respect to development. A school's connection to the local community seems to be an essential antecedent for development. Learning Regions was a prior research project that aimed to find answers to the question of why a particular region in Norway, Sogn og Fjordane, achieved good school results despite having a relatively low average socio-economic status. We found in Learning Regions that ties of the schools to the local community could be a driver in supporting development of schools (Langfeldt, 2015; Aasebø, Midtsundstad, & Willbergh, 2017; Midtsundstad & Langfeldt, 2020).

The school owner (municipality), the Educational and Psychological Counselling Service (PPT), the leaders in the local school, the cooperation between them, and the manner in which they manage their schools and implement new strategies are examples of structures that may function as both drivers and barriers. In Norwegian innovation systems, this is called 'Innovation through Interaction' (Gustavsen, 2013, p. 39). This expression is used to emphasise the fact that employees are not the only ones involved in innovation; there is also the interaction between different actors such as researchers and schools, or head teachers and teaching staff. How the structures for these internal and external interactions are set up for providing or developing new knowledge and applying it in different contexts can be both a barrier and a driver for innovation.

The staff in different schools have experienced different interaction structures and have distinct cultures for expecting development initiatives and quality work among colleagues (Schoen & Teddlie, 2008). Their former experiences of external and internal expectations as support or resistance will be functioning as barriers or drivers.

Drivers and barriers 2: Meaning – understanding

Innovation has often been justified by the importance of implementing new knowledge in educational organisations (Fixen, Naoom, Blasé, Friedman, Wallace, 2005; Roland & Westergård, 2015). Core elements from research are implemented in different educational contexts and expected to produce the same effect. Different models of innovation may be dependent on the employee's loyalty in order to succeed, resulting in the staff's loyalty becoming the main barrier or driver. In the project School-In, we have tried another approach based on 'Allgemeine Bildung' and 'Didaktik', focusing on the selection of content that the participants might find meaningful (Hopmann, 2007). This approach focus at how new knowledge can become meaningful and create new understanding among the participants at the different project levels. We have developed and used working methods to make the innovation content understandable for school owners, the Educational and Psychological Counselling Service (PPT), employees, and citizens, providing them with methods for asking questions and obtaining information. It is important to create collective capacity inside each school organisation as well as at the community and innovation levels. At the organisational level, school leaders need to communicate the legitimacy of new knowledge, and here, the structures of schools for co-creation can represent barriers and drivers. The content of the intervention is important since it may be a driver or a barrier depending on whether the employees find the new knowledge relevant and useful in their everyday schoolwork.

Drivers and barriers 3: Learning through interaction – structures for learning

Learning is one of the main issues in Norwegian innovation (Garmann Johnsen & Pålshaugen, 2013b). This antecedent is closely connected to meaning and understanding, given that learning at an organisational level requires introducing new information and opportunities so that the participants may interpret the new information together in their special context of meaning-making communities (Luhmann, 2000). Different schools are not always familiar with the activities involved in interpreting new concepts and developing a common understanding. This lack of familiarity can, therefore, be a driver or a barrier to learning and creating new understanding. At a local level, civil society can be engaged to varying degrees in the local school. These same drivers and barriers may also influence the school administrations, depending on how they are informed and, on their opportunities, to interpret the information in their different contexts (school owner, PPT, etc.) and common learning communities.

Schools can have different structures for learning, and School-In emphasised the importance of working together across year levels in schools. Employees from 1st to 10th grade worked together to interpret new knowledge in the school context, not only at the classroom level, but for all students attending the school. Hence, they developed structures for learning from each other and were able to meet their students with more equal expectations as well as new knowledge. The research team presented the content, and the teaching staff perceived and translated that content together – a process which had the potential of becoming a driver or barrier for the intervention. The specific working methods and content were also decisive in determining whether the teachers experienced the expectations for learning as meaningful and useful to their collegium and their daily work in the classrooms.

Drivers and barriers 4: Measures – participation

The measures to be implemented in the project were developed by the teaching staff based on the mapping of the school and the chosen development area. The choice of content was based on this process and on the working methods used to implement the innovation-driven measures developed by the teaching staff. Based on research, we know that participation is a driver for innovation (Kristiansen & Aargaard Terjesen, 2013). We also observed that the school staff members knew what they needed and were able to interpret new knowledge and make it useful and meaningful together based on shared experiences in their common school context. At both organisational level and interaction – employee level, the measures had to be created based on the interpretation of new knowledge in the school context. Hence, participation was a driver or barrier for the whole innovation.

The measures developed for the intervention should be presented and discussed in the local communities. It is important to involve local actors in the discussions to help them understand how the school develops and obtains local support. How the connection to the local community is established can be a driver or a barrier, as mentioned before. One school challenged its relationship with the local community and invited all the parents to discuss how they wanted them to meet their children after the summer. This resulted in a 'kick-off festival' after the summer holidays and was a great success. At the administrative level, working methods as well as measures can be interpreted and discussed, and perhaps realised by different parties within the learning organisation; school owner, staff, PPT, etc. Thus, the structures for learning will be drivers or barriers for the realisation of innovations.

3.2.5 Innovation outcomes

Despite effects being the main goal and outcome for innovation projects, effectiveness is only mentioned for a few (28%). For most of these projects (40%), outcomes are not mentioned at all (De Vries et al., 2016). According to the Norwegian model of innovation, the theoretical framework mainly consists of the factors *learning* and *communi-*

cation (Garmann Johnsen & Pålshaugen, 2013a, 2013b). Consequently, the realisation of the innovation will depend on the antecedents presented in the previous part of this chapter, which is why we chose a broader scope than a focus on the school and the individual teacher only. This approach is supported by other research on innovation (Wiik, 3013). In School-In, we aimed to change organisational-level structures that would create synergies on the community, innovation, and interaction – employee levels. Our primary focus was on the organisation, and the outcome should answer our research question: *How can awareness of and change in the expectation structures of schools contribute to an inclusive school culture rooted in the local community?* The results of this approach were measured in a pre-post control group design (chapter 10) which measured changes in the expectations structures experienced by the participants in the local school and in municipal cooperation.

The intervention was conducted in the local schools. Each of the five municipalities, seven intervention schools, and six control schools needed to be well informed about the project. In the following, we will explain how the schools were prepared for the intervention.

3.3 Introduction and preparation of the schools

Schools in the five municipalities were encouraged to apply for participation in the project School-In. Together with the municipal school owner, they signed a contract clarifying their responsibilities. The contract applied to the municipality and the school throughout the participation period, for example, 'Spring 2017'. The head teacher and the head of the municipality both signed this cooperation agreement, which defined the municipality's and the school's areas of responsibility as well as their roles in the project:

The school's responsibility:

Each intervention school was responsible for establishing a working group in charge of executing the intervention in the school. The head teacher and the school's leadership (assistant head teacher, team leaders, and union representative) participated in the working group, which met with the project manager and the research team at the University of Agder (UiA). In addition, the school committed itself to:

- scheduling six 3-hour staff meetings during the semester in which the entire teaching staff participated
- executing the intervention in collaboration with the UiA research team; the working group participated in networks with other intervention schools, which entailed one all-day network meeting per semester
- contributing to innovation in other schools in the municipality in collaboration with the municipality's working group
- enabling the head teacher to participate in the municipal working group

- participating in the whole project – interviews, video observations, audio recordings
- participating in surveys during the project
- taking into account the teachers' wishes for topics for innovation

The municipalities had the following responsibilities:

- establishing the municipal working group consisting of the school owner, PPT leader, and the head teacher at the intervention school
- ensuring working group cooperation with the UiA coordinator and project manager; anchoring, planning, and implementing the innovation in their municipality
- collaborating with the school on facilitating the intervention
- ensuring implementation of the innovation in the school in question and all schools in the municipality

The schools were prepared by way of the meetings with the municipal and school working groups. At these meetings, the project manager (UiA) informed the head teacher, the school owner, and the leader of the PPT about what to expect for the next semester. Each participating innovation school was awarded NOK 70 000 per semester to participate in the innovation. The teaching staff were introduced to the project through the first step of the intervention, which is described in the following.

3.4 Scheduling of the study in the schools – a typical run

We started the intervention in each school by meeting with the municipal working group. The project coordinator, the head of the municipality, the leader of the PPT, the school's head teacher, and the project manager (UiA) all participated. At this meeting, we reminded the participants of the formal contract (presented above) and showed them a six-step intervention plan (figure 3.1). We also made it clear that our working methods were developed by researchers and teaching staff together in the project (Dalehefte & Midtsundstad, 2019). The six steps were presented to the municipal working groups together with information on time and type of intervention, as well as dates for the research team to visit the school.

The 'municipal working groups' were responsible for enabling the participants' understanding of the project, with their meetings taking place the semester before the current school became involved. Following these meetings, the project manager (UiA) met with the school working group. The schools had selected different people for this working group, but as already mentioned, we tried to use already established organisational and community structures to ensure the best results. We expected these already established structures to have the potential to spread information effectively and to be recognised by those involved. At the meeting with the school working group, we presented the six steps together with the dates for the intervention that would be taking place. We explained a typical run through the process and allowed

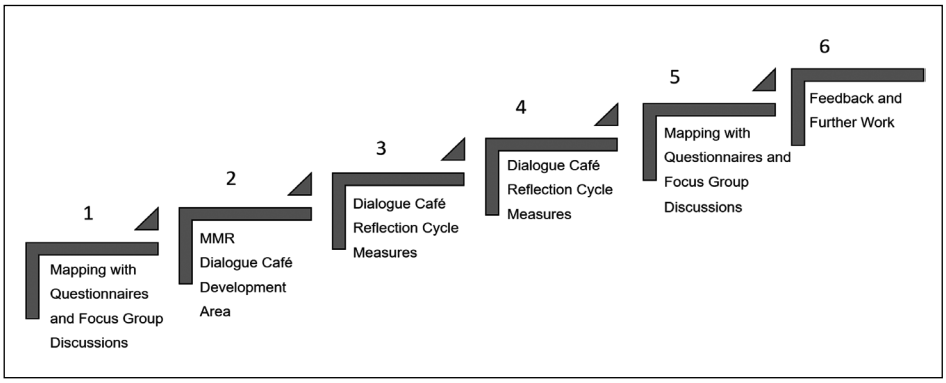

Figure 3.1: The intervention process

the participants to ask questions and discuss their experiences from former development work as well as their staff's usual response to change.

When the semester for the intervention commenced, the teaching staff were well prepared and familiar with the dates for the research-team visits and the progress of the intervention. The leader of the team at the school was asked to divide the teaching staff into groups, which consisted of teachers and paraprofessionals from different year levels. The intention was to let them work together in groups of colleagues representing the range from 1st to 7th, 8th to10th, or 1st to 10th grade, depending on the school type. In some of the schools, the teaching staff had no previous experience with working across year levels. We wanted them to do so in order to discuss their school, not merely their subject or their students. Our findings show that this is of great value when it comes to increasing the collective capacity for developing their school (Ingebrigtsvold Sæbø & Midtsundstad, 2022). These groups cooperated during the whole intervention. It should also be noted that, in some of the schools, we had another group consisting of a school leadership team, participants from the local PPT office, and a school-owner representative. This group discussed the same issues as the rest of the teaching staff and followed the same intervention process.

3.4.1 Step 1 – mapping the expectation structures

When our team, consisting of five researchers, arrived at the school and met the whole teaching staff for the first time, we introduced ourselves and informed them briefly about the project and the participating municipalities. We also asked them to sign a form, approved by the Norwegian Centre for Research Data, stating that they agreed to participate in the study and would allow us to audio record what was said during our meetings. We then involved the groups formed by the school leadership team in focus group discussions. The research team had prepared questions for the focus group interviews (chapter 8). A researcher placed a new question on the table in front of the group members every sixth minute for discussion. Unlike an ordinary interview where the researcher asks questions for the purpose of obtaining answers, this was

an opportunity for the staff to discuss the school and its academic issues with each other in a manner with which they were familiar (chapter 8). Each group discussion was scheduled to take one hour, after which we went back to meet with the other groups. The staff were kindly asked to fill in the questionnaire (chapter 10), which took approximately 20–30 minutes. When this mapping of the school was finished, we gave a short presentation of the project and what we wanted to investigate. We also explained that the findings from the focus group discussions and questionnaire aimed to identify the school's potential for development.

Before the next step and the next school visit, the research-team analysed the focus group discussions and the questionnaire to create a profile of the school. We also utilised a student questionnaire (chapter 10) and conducted group interviews with the oldest students at the school – one group of girls and one of boys (chapter 7). In these interviews, we asked the respondents to talk about the school's local setting, what they did in their leisure time and so on. We also conducted place-analytical investigations and talked to people familiar with the place history and characteristics. We videotaped a teaching situation, and the participating students filled out a questionnaire about how they perceived the instruction (chapters 9 and 10). The essence of the findings was presented to the school's leadership before being presented to the teaching staff, in order to validate our findings and help the school's leadership feel secure and in control of what we intended to present to the teaching staff.

3.4.2 Step 2 – the Mental Mapping Response method – choosing a development area

In step 2, the findings from the mapping were presented to the teaching staff to allow for discussion. To enable this step, we extracted eight bullet points and compared them to characteristics of inclusive practices as described by Göransson & Nilholm (2014) and Ainscow, Black-Hawkins, Vaughan, & Shaw (2000). The purpose of this comparison was to expose the staff members to their development potential in order to challenge mindsets concerning work practice. This kind of 'interruption to thinking' is recommended by research to start the process for change (Ainscow et al., 2000; Hargreaves, 2002). We used a table showing the differences between the eight most significant findings from their school and the characteristics of an inclusive school. Each finding was formulated as a statement, for instance: 'The school enjoys little support locally'. The groups discussed each of the statements, using the Mental Mapping Response method (chapter 4). During the discussion, the members of the group were asked to comment on whether they thought the findings were 'wrong', 'surprising', 'recognisable', or 'requires action', by using paper cards with different colours and meanings. The point of this approach was to enable a process in which different opinions on the findings could became apparent, verbalised, and modified by other viewpoints in the groups (Hillen, 2020; Dalehefte & Midtsundstad, 2019). The different perceptions of their school allowed the staff to become aware of how other colleagues perceived it and its possibilities for learning and inclusion. The staff members

were also able to interpret the research findings in their own 'community of meaning' (Luhmann, 2000). Sharing the intervention in this way was done in order to create conditions for collective, reflective processes towards a common understanding and increased collective capacity. After the group discussions using the Mental Mapping Response method, the research team collected the coloured notes and analysed the feedback from the teaching staff based on the different categories, with particular focus on notes indicating 'requires action' (chapter 4). These results were presented in a plenary session, where the main topic for the intervention was voted on (Hillen, 2020; Dalehefte & Midtsundstad, 2019). This process of participation allowed the teaching staff to decide on the direction of the intervention in a democratic process (Dalehefte, Kristiansen, & Midtsundstad, 2018).

3.4.3 Step 3 – Dialogue Cafés to discuss academic issues

One week later, the research team visited the school again, and work with the development area chosen by the teaching staff commenced. The researchers held a meeting, initiating it by providing theoretical knowledge and research on the development area to highlight its importance. For instance, if the teaching staff had agreed on the development area 'common expectations for the student role', the research team would prepare and conduct a short plenary presentation on that area (table 3.2.).

Table 3.2: Development areas identified in each innovation school, and topics of the short presentations

School	Development area	Topic of the research team's presentations
1	Common expectations for the student role	Expectations in the school organisation, common expectations for students
2	Stronger focus on school community for *all* students	Communities with inclusive characteristics – a community for inclusion, belonging, and expectations
3	A place for everyone – co-creation of community and the school's reputation	Connecting, understanding, and using the school's local community
4	Use of the local community and parents as resources for the school	Using local community resources in teaching – student participation
5	Creative and professional development within the school community	Students' participation in teaching, dialogue, reproductive and narrative style – what promotes academic development?
6	Jointly inspire students to engage and participate using the local community	Students' participation, in-depth learning Prerequisites for student learning and motivation Local community as a resource for the school
7	Together on common expectations for the school's student role	Expectations for the student role socially and academically

The research team used the mapping of the school, the development area, and the presentation of research to formulate five questions for a Dialogue Café (Brown & Isaacs, 2005). At the Dialogue Café (chapter 5), each of these five questions were placed on a separate table with each group taking seats at one of these tables. Also on each table were markers and a large sheet on which the group facilitator was to write the group's comments and ideas on the question. After discussing this first question, the groups dissolved and the staff moved on to the other tables to discuss the other questions with their colleagues. This allowed all participants to discuss their academic perspectives on the different questions in order to learn and develop common knowledge through interaction. When all five questions had been discussed, the original groups reformed to discuss what had been said and noted. The staff then collectively chose one issue they wanted to work with in their daily schoolwork and reported it to the research team before the next meeting.

3.4.4 Step 4 – Reflection Cycles – from reflections to measures

In this step of the intervention, the research team pursued the method of Reflection Cycles (Fischer, Kobarg, Dalehefte, & Trepke, 2012). This method was used to start discussions and learning interactions among the teaching staff in order to enable them to jointly reflect on how to develop their school together. We know from research that reflection is not enough to result in practical change (DuFour, 2004). Thus, the intervention aimed to translate the reflections into measures – concrete measures the teachers themselves knew they could benefit from in everyday life in the classrooms. In School-In, we saw that the Reflection Cycle (chapter 6) had the potential to specify the ideas generated at the Dialogue Café and help ensure their conversion into practical measures by the staff. The five steps were (1) identifying the development area; (2) defining aims; (3) agreeing on measures; 4) putting the measures into action; and (5) documenting and reflecting on the experiences. Each group was to work with their chosen measures at different year levels in the school and report to the research team on their work with the measures. The groups were also responsible for involving the teaching staff and informing them about the measures and how they could benefit from trying them out.

Both steps 3 and 4 – the short presentation and the questions for the Dialogue Café and Reflection Cycle to create new measures – were repeated twice during the intervention. In step five, we mapped the school for the second time to measure the effect, while the teaching staff continued to report on their measures for the reminder of the intervention.

3.4.5 Step 5 – mapping the school's expectations structures

In step 5, the teaching staff participated in focus group interviews and filled in the questionnaire once again. We used the same questionnaire, but different questions in the focus group discussions. This made it possible to map the experiences of the

teaching staff in the project and to evaluate the programme effects. We also videotaped the same teacher(s) and class again, and the students once again filled out a questionnaire directly after the videotaped instruction.

3.4.6 Step 6 – discussing innovation results and further work

In step 6, the school was informed about the effects of the intervention and the leadership invited to discuss the results. Based on prepared suggestions for further work, we started this process to enable the school leaders to continue the good work, establish learning by interaction, and develop meaningful and relevant measures for their everyday schoolwork.

During the intervention, school leaders met separately instead of taking part in the teaching staff's Dialogue Cafés or Reflection Cycles, to enable the staff members to discuss freely and to help give them a sense of ownership of the measures created. The school leaders were given the same questions for discussion to enable them to create measures that would be appropriate for their different contexts – an opportunity that was utilized in different ways by the school leaders.

3.5 What kinds of drivers and barriers did the research team observe?

In this section, both the innovation and the intervention are described, with the differences between the two approaches being explained in table 3.1, showing the four levels of antecedents: (1) community level; (2) organisational level; (3) innovation level; and (4) interaction – employee level. These four levels of antecedents are known to be influential in the innovation process (De Vries et al., 2016). Levels 1 and 3 represent the innovation in our project, while levels 2 and 4 are the focus of the intervention in the project. Thus, innovation and intervention are dependent on each other. To discuss the drivers and barriers encountered in the process, we need to separate the two approaches, starting with the intervention.

3.5.1 The execution of the *intervention* – drivers and barriers

The research team observed that a school's connection to the local place influenced how support from civil society and the school administration was perceived (Horrigmo & Midtsundstad, 2020). If the school had a poor reputation in the local community, it tended to maintain the status quo and be more likely to defend its way of schooling than being open to change. Thus, the need to defend the status quo was one important issue to consider with respect to drivers or barriers for change. The leadership in the schools could express a perception of support and trust from external actors, or one of mistrust and control. Support and trust seemed to correspond

with the adjustment of schools to local expectations and were, thus, important in the consideration of drivers and barriers for change (Midtsundstad & Langfeldt, 2020).

Other factors which influenced the intervention included differences between the schools concerning the nature of the school leader position and the methods used to communicate the opportunities associated with the intervention. The teaching staff were more or less prepared for a semester with intervention, but the staff's understanding of the development area turned out to be different in some schools, even though the development area was chosen by the staff members themselves. This was also an important factor in the consideration of drivers and barriers. Also, the schools had different experiences with working together and different opportunities to meet in order to learn from each other and discuss new knowledge. This begs the question: How do certain organisational forms influence individual learning? or: Does individual learning over time create collective structures? (Garmann Johnsen & Pålshaugen, 2013b). We see that both approaches are necessary for process innovation.

The interaction level in table 3.1. was highly important for the teaching staff, and in almost every school, a union representative took part in all decisions related to the intervention in that particular school. Thus, some possible obstacles were avoided. In schools that were less prepared, and with less involvement by the union, we perceived a hesitance towards audio recording of focus group and Dialogue Café discussions, etc. These external and internal expectations were important barriers or drivers in our project.

All schools participating in the project seemed to be highly satisfied with their work. They seemed to reinforce a positive view on common practices, despite a poor reputation or poor results and evaluations. When we, at the start of the intervention, mapped the school, compared them to another more inclusive school, and claimed they needed to change, their reactions were as expected. Allowing them to discuss our findings and tell us we were wrong, was important for moving past resistance so that collective reflections could start. Of course, they did not share the same opinions on what was wrong and had to modify their resistance. In this way, we began to challenge their internal expectations for each other. We argue that this was an important driver in our approach.

The teaching staff members chose the development area themselves, making it relevant for them as a collegium. The topic of the presentation and the questions developed by the research team assisted them in discussing their area of development. They then developed measures which had the potential to become either drivers or barriers for the execution of the intervention. For these measures to develop as drivers, they would need to be relevant and useful in everyday work. They might even be decisive for the group or for the individual teacher or paraprofessional. As it turned out, the focus group discussions were indeed experienced by most of the participants as useful and relevant.

Despite this, we saw that a few of the participants showed some resistance towards their groups including staff from different year levels, but the discussions and experiences related to the necessity of knowing the whole school convinced most of them.

This resistance could, of course, be a barrier in schools where this approach to school development was not accepted. Nevertheless, we observed that this approach was necessary for the colleagues to be able to discuss school development.

Measures can also be perceived as useful and relevant in everyday schoolwork because of the connections they create between year levels. When discussing their subjects and instruction, teachers tend to discuss their own students; they seldom engage in discussions on how schools allow students to learn or to develop good social or academic roles in the learning community (Dalehefte & Midtsundstad, 2019; Midtsundstad, 2019). The opportunity to focus on the students' situations from the 1st to the 7th or 10th grade helped the staff realise how measures implemented in the 1st grade and things the students learn early on can end up benefiting both students and teachers in later years.

3.5.2 The execution of the *innovation* – drivers and barriers

The innovation was initiated by the five municipalities to reinforce their efforts to enable the development of inclusive learning environments in their schools (chapter 1). They expected our cooperation on innovation in the public sector to be a chance to reinforce these efforts. Our cooperation during the innovation was of great importance and involved a meeting with the project group once per semester, as well as network gatherings where the most recent findings were presented by the research team. The heads of the municipalities were responsible for preparing the schools for the intervention as well as for making sure the innovation was realised after its completion. They also agreed to decrease the pressure on the schools to allow them to focus solely on the project School-In during the semester in which it took place.

In an effort to avoid unnecessary resistance both in the leadership and in the teaching staff, we asked the municipalities to create a municipal working group for cooperation between the heads of the municipalities before and after their schools participated in the project. Nearly all of the municipalities managed to establish this working group. The group was an important driver for the School-In innovation and for communication and learning throughout the process. In these groups, expectations were communicated to both the school leaders and the leader of the PPT.

As mentioned before, the innovation used already established cooperation structures. This was an important driver in the innovation. Nevertheless, the communication, information, and expectations for learning from each other were different in the five municipalities. Here, the intervention and the experiences from the relevant local school were of great help in discussing different opinions on how and what colleagues can learn from each other.

The use of measures developed in the school in different contexts and by different actors at the community level became increasingly important during the innovation. Over time, what seemed to be a barrier became a driver in the innovation process. Acceptance of the project and how it could be meaningful in other contexts gradually displaced resistance both within the school administration and in the PPT. The ac-

ceptance occurred when these groups began to participate in the school intervention. In most schools, the opportunity to take part was not grasped at first, but their participation and observations increased the understanding of the intervention and how it could be meaningful in their own contexts. It might be said that the innovation's different levels allowed people to use local experiences to translate general concepts into an everyday language for new practice (Kristiansen & Aargaard Terjesen, 2013).

3.6 Theoretical, methodological, and practical implications for further research

To explore implications for further research, we will point to the three main areas the project School-In aimed to address: (1) Mapping of expectation structures that constitute the foundation of school culture; (2) Change in school culture as a result of amended collective expectation structures in the school organisation; (3) Implementation of new expectation structures in schools and support systems. The project's goal was to find answers to the research question: *How can awareness of and change in the expectation structures of schools contribute to an inclusive school culture rooted in the local community?*

In this chapter, we have presented the innovation as a framework for the intervention. This has provided us with answers to the research question owing to study of the three areas mentioned above. Of course, there is no simple answer to the question, but rather different answers published in various journals referred to in this book, and surely others yet to be discovered. The theoretical, methodological, and practical implications for further research are discussed in the following chapters. Here, we concentrate on implications for further research concerning the connection between innovation and intervention.

3.6.1 Theoretical implications for further research

Theoretically, the project's evolution from system theory inspired by Niklas Luhman's approach (1990) has been one of its strengths. This theory was used empirically to understand how local schools connect to local expectations and thus develop differently (Midtsundstad, 2010). Explored further in the project Learning Regions (Midtsundstad & Langfeldt, 2020), this theoretical approach and its focus on expectations, structures, interactions, and communication have made it possible to pinpoint the antecedents that are crucial for the connection between innovation and intervention.

We wanted to focus on what characterises inclusion at a system level. Expectations at both the community and administrative level are one way to approach this kind of question. Of course, we see the need for further research on the connections between the school owner, the school's head teacher and leadership, and the teaching staff. The theoretical implication for the link between innovation and intervention then, is that

further exploration of other theoretical approaches may elucidate additional benefits to public sector innovation and especially education.

Further research is important because our study of intervention was intended to create synergies at all levels of innovation. To make it possible to discuss the links between them, we need concepts like expectations and structures that give us opportunities to discuss changes in the public sector. This is also discussed in Norwegian innovation research focusing on what theoretical approach (Luhmann or Habermas) the innovation research will benefit from the most (Garmann Johnsen & Pålshaugen, 2013b).

In Norway, we have a long tradition of local curriculums and the autonomy of the municipalities as school owners. The government emphasises school-based interventions and also decentralised competence raising. This means that, based on several strategies to raise the teachers' competencies, the government leans on research indicating that teachers learn best when they are together in their usual context where they must use new knowledge and change their practice accordingly. School-In is, thus, part of this trend of creating an intervention rooted in the school and based on municipally-driven innovation.

In this chapter, antecedents are used to show the connection between innovation and intervention. Thus, the synergies became visible over the course of the project. These were not universal, but rather specific antecedents chosen to fit this project and to concretise the connection between the innovation and the intervention. Thus, a theoretical implication is that exploration of the antecedents' natures as barriers or drivers will provide a different innovative approach in further research.

3.6.2 Methodological implications for further research

Our methodological approach was first and foremost connected to the intervention and is thoroughly presented in the following chapter in this book. However, our process innovation approach also had implications for the methods used in the intervention, since we had to create new questionnaires and develop working methods throughout the project to reach our goals. This included working methods for local school development. These working methods were to be school-based, taking the experiences of the school into account, and familiar to the municipalities.

Throughout the project, we needed to earn the trust of the various parties and show them how to benefit from the co-creation of the intervention. From beginning to end, the school owners (who were also the project owners) wanted to learn from the project and have the results presented at their project meetings, municipal working group meetings, and the network meetings taking place each semester. The link between the innovation and the intervention benefitted from this interest shown by the local actors. They regularly asked for results, showing an entirely different level of interest in the research than we normally experience when the parties are less involved. Presenting results before they have been published can be challenging, but in our experience, it provided a meaningful response to our results and emphasised

which aspects were significant for the other parties and how our findings were understood. This will be beneficial for future realisation of the innovation in all the schools in the five municipalities.

One methodological implication in our project springs from the fact that our research focused on the intervention and not on innovation as a whole. We did not collect data from all the meetings with the persons involved. This would have been an even more holistic approach but would have required more resources. Nevertheless, the reports from each meeting allowed us to use these to document the discussions. We saw changes in the expectation structures between the school owner and the PPT. We recognised that discussions had emerged between different municipalities about the role of the PPT in schools and the connection between the school owner and this important municipal organisation. It would have been advantageous to the project had this been documented in greater detail and empirically investigated. We have had to consider interviews after the project's innovation period in order to identify how the synergies influenced the project's community and innovation levels, especially the role of the antecedents as drivers or barriers. This is important for future innovation research to consider.

3.6.3 Practical implications for further research

The link between the innovation and the intervention illustrated a number of practical implications. While the researcher was deeply involved in the intervention processes in the innovation schools, other parties in the innovation had only occasional meetings where information was exchanged. Even healthier engagement may have resulted from receiving and providing good information and constantly communicating on all that was done and learnt.

We used a practical administrative coordinator in our project to advise us on what information was useful and necessary throughout the process; this coordinator was the key link between innovation and the intervention. All the required permissions, changes, and questions were discussed with this person before they were formally addressed in the established groups in the project. This aspect took more time than anticipated, however, the project as a whole benefitted from the adjustments and considerations made with respect to occupying the time of the municipal heads.

Our research team communicated well and learnt much from each other during the whole process and felt a sense of joint ownership as well as a conviction that the innovation and intervention were our common responsibility.

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