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## An Exploration of the “Mimetic Aspects” of Storyline Used as a Creative and Imaginative Approach to Teaching and Learning in Teacher Education



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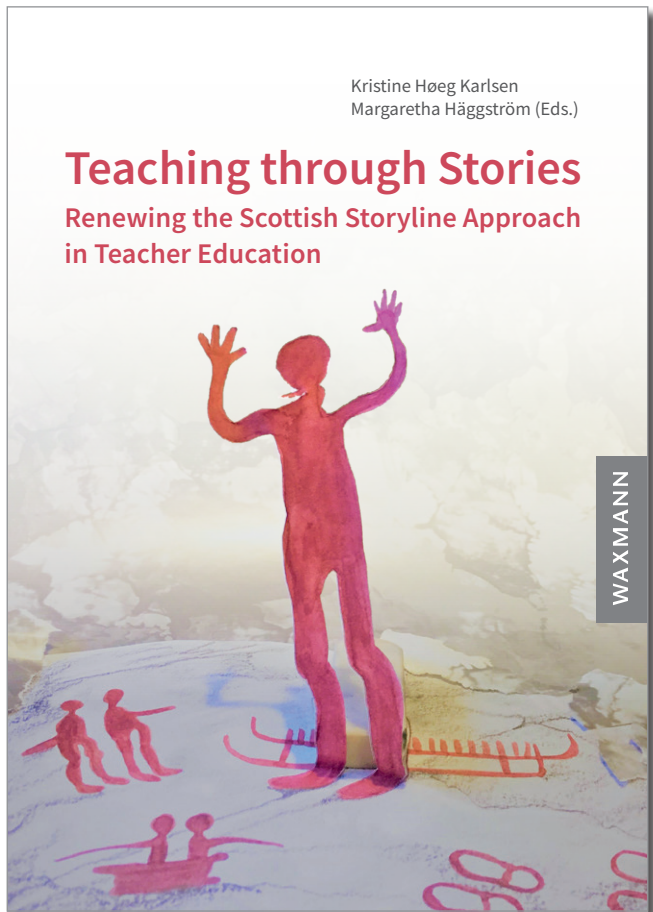
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## Chapter 4

# An Exploration of the “Mimetic Aspects” of Storyline Used as a Creative and Imaginative Approach to Teaching and Learning in Teacher Education

*Kristine Høeg Karlsen, Gitte Cecilie Motzfeldt, Hanne Eik Pilskog, Adrian Kristinsønn Rasmussen and Camilla Blikstad Halstvedt.*

*Abstract.* The aim of this study is to contribute to a comprehensive understanding of the potential mimetic aspects of The Storyline Approach (TSA)<sup>1</sup>. This study critically examines how student teachers create imaginative make-believe experiences within the use of *examples* (props) in teaching and learning about sustainability. The analysis follows the parameters set out in Willbergh’s (2011b; 2015, 2016, 2017) theory of mimetic didactics. Data were collected during a Storyline by sound recordings, and immediately after the Storyline using focus group interviews. The result of the study indicates that Storyline expands the students’ own experiences through imaginative make-believe interpretations created from 1) The making of the props: the frieze and the handheld puppets, 2) Taking on fictional roles and role-playing, 3) Applying, sharing and using each other’s knowledge, and 4) Perceiving activities as if they were pupils. This is interpreted as important for the students’ professional teachers’ qualification in bridging school content with competence for the future.

*Keywords:* Sustainability; “as-if” experiences; professional development; exemplary teaching.

## Introduction

Developing student teachers’ professional identity is an essential concern within teacher education (Tsybulsky & Muchnik-Rozanov, 2019, p. 48). In recent years, a growing body of research has focused specifically on student teachers’ professional identity development (see cf. Anspal, Leijen, & Löfström, 2019; Lamote & Engels, 2010; Ruohotie-Lyhty & Moate, 2016). Teacher identity can be understood as an “ongoing process of negotiating and interrelating multiple I-positions in such a way that a more or less coherent and consistent sense of self is maintained throughout various participations and self-investments in one’s life” (Akkerman & Meijer, 2011, p. 315). Teachers’ professional identity is therefore, according to Day, Sammons, Stobart, Kington and Quing (2007, p. 103) the “key factor influencing a teacher’s sense of purpose, self-efficacy, motivation, commitment, and effectiveness” (Day et al. in Anspal et al., 2019, p. 1). In this study our particular interest is in *mimetic didactics*, a new perspective on teachers’ professional

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1 The abbreviation TSA is developed by Lockhart-Pedersen and Bjørnstad (2019a)

development (Willbergh, 2010, 2011a). Mimetic didactics defines, according to Willbergh (2015), an imaginative function in education; where the teacher based on her/his prior knowledge of the students and the use of examples, manages to transform the curriculum “into significant content conceived as meaningful by the students themselves” (p. 342). This means that the teacher knows how to design classroom instruction in ways that activate students’ imagination in manners that bridge “school and real life and school and future” (cf. Willbergh, 2015, p. 341). Examples in this study is defined as, “something specific that represents something general [...] a specific aesthetic object, a case, a verbal expression, a picture or the like” (Willbergh, 2016, p. 114).

With this, the study sheds light on how student teachers’ *mimetic didactics* can be developed through the use of Storyline as a “creative and imaginative approach” (Omand, 2014, p. 8) to teaching and learning in teacher education. In Storyline, the most evident products of imagination are according to Ahlquist (2011) the character representations and the frieze; *examples* created by the learners (p. 38). The aim of the particular Storyline-project was to expand the student teachers’ insight into how exemplary teaching can be designed for making the school’s content significant and meaningful for life. Further, the goal of the Storyline-project was for the student teachers to experience how exemplary teaching facilitates active imagination and “make-believe” experiences (cf. Willbergh, 2011b). Experiencing, practising and participating in a Storyline is according to Falkenberg (2016) the most effective way of learning to teach this method (p. 221).

The purpose of the research study is thus to explore if, and if so how, examples created within the particular Storyline focusing on sustainability, activate subjective facets in the student teachers’ learning. To guide the data collection and analysis, the following research question has been put forward: *How are imaginative make-believe experiences created through a Storyline implemented as exemplary teaching in teacher education for second year students, where sustainability is the content of the learning?* From the perspective of mimetic didactics, ‘make-believe’ defines creative interpretations of examples where fictional truths and “as-if” experiences, are generated (Willbergh, 2011b). The study aims to contribute a novel understanding of the potential of using Storyline as exemplary teaching in student teachers’ professional development. By focusing on exemplary teaching, it is possible to gain insight into the student teachers’ collective agreement and willingness “to play the teaching’s game of make-believe” (cf. Willbergh, 2011b, p. 69). A refusal, on the other hand, is a rejection of imagining the perceptible objects as a vehicle for constructing meaning (cf. Willbergh, 2011b, p. 66). Furthermore, a rejection could also address obstacles student teachers experience when exemplary teaching through Storyline is used for professional development in teacher education. Derived from this the research is based on the following assumption; for Storyline, as an imaginative and exemplary approach, to expand student teachers’ mimetic didactic competence through the use of examples, subjective facets in their learning must be activated by the examples at play. This means that, the student teachers conceive the particular curriculum content, which in this case is sustainability, as significant and meaningful (cf. Willbergh, 2015, p. 342), and further that the content activates students’ imagination in a way that bridges education and real life, and education and future for these student teachers (cf. Willbergh, 2015, p. 341).

Following the introduction, the theoretical framework used in this study will be outlined in accordance to Willbergh’s (2011; 2017) theory of mimetic didactics, elaborated with Wagenschein’s (2000) theory of *exemplary teaching*. Next, the context of the study, *The Norwegian River Delta Storyline*, will be described, before the research design and methodology is explained. The results of the study are then presented, followed by a discussion of the core findings of the study. Finally, we will make some concluding remarks.

## Theoretical Framework

The theoretical perspective used in this study, is derived from a *Bildung*-centred view on didactics (Willbergh, 2010, 2017). The concept of *Bildung* contributes to the students’ personal development by *cultivating* the imagination and expanding the students’ perspectives towards new and meaningful knowledge (Willbergh, 2011b, p. 69). Within this perspective, the purpose of schooling is thus to use “knowledge as a transformative tool of unfolding the learner’s individuality and sociability” (Hopmann, 2007, p. 115), and further that “whatever is done or learned is done or learned to develop one’s own individuality, to unfold the capabilities of the I (cf. Humboldt, [1792] 2000)” (ibid., 2007, p. 115). In the context of professional education, the essence of *Bildung* is to facilitate teaching that narrates the students’ capabilities “for the practice they will engage in as professionals” (Beck, Solbrekke, Sutphen, & Fremstad, 2015, p. 447), which in this case means that the student teachers after graduation “know their disciplines and pedagogy to help children learn” (ibid.). In the following, we will outline the theoretical framework used in this study, focusing on how imaginative make-believe experiences can be activated through *exemplary teaching* used for professional development in teacher education.

The imaginative function in education (cf. Willbergh, 2015) where the learner transforms curriculum content into meaning, represents a creative learning process. This ability to allow for creativity and transformation is, within a *Bildung*-centred perspective, necessary in order to bridge education and real life (cf. Willbergh, 2015, p. 341). To imagine something, Willbergh (2011b) states, “is to experience it ‘as-if’ it has happened to me” (p. 67). “As-if” experiences define “a concentrated meaning-making process in the present of the moment that works through the use of active imagination and re-contextualisation” (Willbergh, 2011b, p. 71). Accordingly, there is a need to select examples and to deal with these examples intensively. To try exemplary teaching there is a need to move beyond the platforms of instructions. Exemplary teaching is, according to Wagenschein (2000), a “platform of concentration at which we probe deeply into a subject or problem. This becomes not just a platform but a mirror of the whole” (Wagenschein, 2000, p. 165). In exemplary teaching with imaginative “as-if” experiences, the students are given the possibility to interpret examples as both subject matter and relevant future competence (Willbergh, 2017, p. 616). Following Willbergh (2011b, 2017), there are three intertwined aspects that need to be addressed, for teaching to facilitate make-believe experiences in a classroom setting. In this study, Willbergh’s (2011b) theory is adapted to teacher education, to capture teacher educators’ effort in activating student teachers’ imaginative make-believe experiences.

The first aspect that needs to be met, according to Willbergh (2017), concerns the teachers' (in this case the teacher educators') effort and ability to engage student teachers in making prior memories of the subject matter to be recalled (cf. p. 619). Learning is cumulative, and through creativity, student teachers would be able to transform prior and new knowledge with their worldviews and thus expect to acquire new and meaningful competence as part of their professional learning. The importance of having the learner concentrating on the activity itself, is highlighted by Wagenschein (2000). He claims that it, "must be penetrative and intense entering into the matter at hand and into the soul of the learner" (Wagenschein, 2000, p. 166).

The second aspect of meaning-construction of teaching concerns, in line with Willbergh (2017), the articulation of examples. In this case, the teacher educators' selection of a concrete object or prop which captures the student teacher's attention, and so makes it clear that here and now it is "as-if" this example means 'subject matter' (Willbergh, 2017, p. 619). Willbergh (2015) uses a flower as an illustration, "making students imagine the flower 'as-if' it means 'local flora' for them in real life, as a supplement to imagining it 'as-if' it means 'biology'" (p. 344). The nature of the example is thus able to convey general knowledge using something specific as the medium (Willbergh, 2010). In addition, for the example to generate make-believe experiences as a contribution to *Bildung*, the "objects must at the same time be perceived as relevant to their prior experiences" (Herbart & Stern, 2002; Klafki, 2000 in Willbergh, 2017, p. 619). The semantics of teaching in such a perspective is, according to Willbergh (2011b), "a kind of imagining that is highly self-referential and individual" (p. 67).

The third aspect of meaning-construction in teaching highlights, according to Willbergh (2011b, 2017), an aspect that emphasises, in this case, the student teacher's personal growth and development resulting in a new perspective on the world. Willbergh (2011b) uses again the example with the flower, "where the student understands the relevance of biology for his own life, and, thereby, a new understanding of the world is created: the world is seen as biology" (p. 68). It is important to find a balance between the object or the props representing a 'real world', and the subject matter. It enables the learner's ability to understand the theoretical aspects of subject matter, in order to accumulate new and meaningful knowledge for personal growth and development (Willbergh, 2011b, p. 68). Furthermore, the learner's creativity and spontaneity might affect the learner more deeply hence contributing to a fundamental transformation of knowledge and experience, in this case by the student teacher. Therefore, the reflection must not only reflect the whole of the subject matter, but also educate the whole of the learner; leading to a process of *Bildung* in motion (Wagenschein, 2000, pp. 162, 166).

## A Storyline with Sustainability as the Curriculum Content

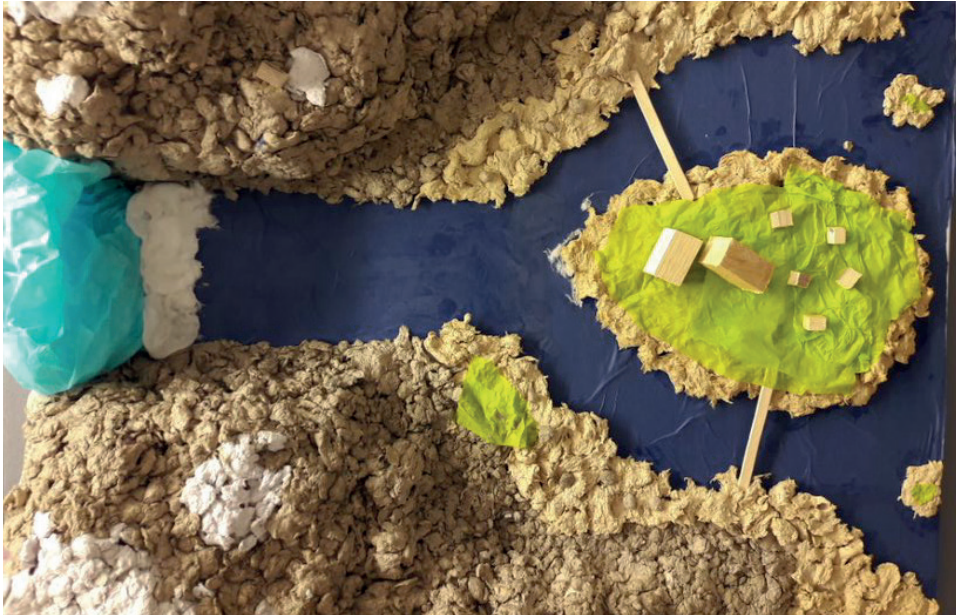
The implemented Storyline, titled *The Norwegian River Delta*, involved 60 student teachers in the second year of a five-year master-level teacher education at a mid-sized Norwegian University College in Southern Norway who were preparing to teach grades 5–10. The Storyline focused on curriculum content related to sustainability principles and local environment and included six subjects: natural sciences, social sciences, English, arts and

crafts, drama, and pedagogy. Educating for a sustainable future is recognised as a key element in quality education (Education Act, 2017; UNESCO, 2018), and the teacher education programme shall thus “qualify the student to teach sustainable development as an interdisciplinary topic” (Nasjonalt råd for lærerutdanning, 2016, p. 9).

The project took place over a period of 1.5 weeks and included one seminar on sustainable development in advance of the Storyline, four days of experiencing TSA themselves and two days of post-Storyline workshops, processing and reflecting upon their experiences. Participation in the Storyline project was compulsory for the students. In addition to a former teacher with 20 years of experience implementing TSA in public Norwegian schools, seven teacher educators were engaged in the process of developing and carrying out the project. *The Norwegian River Delta Storyline* was based on five key factors necessary to succeed with the implementation of TSA in Teacher Education suggested by Karlsen, Lockhart-Pedersen, and Bjørnstad (2019b). The Storyline took place in an everyday ‘realistic’ situation unfolding in present time and was a “classical Storyline” (cf. Storhaug, 2009, p. 113) where the story was set in present time; here-and-now (cf. Eik, 2000). As the theme of the Storyline was the interdisciplinary topic sustainable development, interdisciplinary group composition in the Storyline was desirable. We therefore organised 12 Storyline groups consisting of five students studying different subjects (i.e. in no groups were all students taking the same courses). To improve and structure high-quality group work, we used cooperative learning as a framework (cf. Karlsen, Høeg & Høeg, 2020, see chapter 1 in this anthology).

The Storyline was driven forward by six events, including 24 activities and eight key questions (see overview in Table 1). The *first event* involved the development of the frieze, a model of their own river deltas, which the students themselves created out of pulp, tissue paper and wood (images 1–2, see activity 5 in table 1). Then, in *event 2*, each student made their own character (inhabitants) who lived in the delta. The characters were embodied by making a hand puppet with a personal card (images 3–4, see activity 9 in table 1). During the Storyline, the students were to stay in their roles as their character when solving the tasks in hand. In *event 3*, the local government, announced a competition reaching out to all the inhabitants in the delta, offering 10 million NOK (~1 million Euro) for the most innovative project aiming at making the delta more sustainable in the future (cf. activity 12). At the same time, a horrifying disaster occurred in the delta (cf. *event 4*). The inhabitants had to make an immediate emergency evacuation (cf. activity 13). Finally, when it was safe to return, they found their deltas polluted with garbage and dead animals (cf. activity 14). While physically cleaning up the deltas after the disaster, the student teachers (inhabitants) continued working on their concepts. *Event 5* captured the making of a news story to the local children aiming at reducing anxiety for the impact of the environmental disaster (event 5, activity 18). The Storyline ended with a final ceremony (*event 6*) where the inhabitants presented their final concepts to a jury, who then announced the winning project (images 5, activity 22).





Img. 1: The frieze. One example of Norwegian River Deltas, created by the student teachers (cf. event 1, activity 5, imagining and creating the river delta). Credits: Kristine Høeg Karlsen.



Img. 2: The frieze. One example of a detail in one of the friezes. Here: a lighthouse (cf. event 1, activity 5). Credits: Kristine Høeg Karlsen.



Img. 3 and 4: The characters. Two examples of inhabitants living in the river delta, represented by hand puppets (cf. event 2, activity 9). Credits: Kristine Høeg Karlsen.



Img. 5: The winning concept. A high-tech prototype bridge, made to capture floating waste and garbage from the river delta at the same time ensuring that fish and other organisms can pass. Credits: Kristine Høeg Karlsen.



Tab. 1: A summary of the key elements of the storyline ‘The Norwegian river delta’

day	event	key questions	In-role activities	Out-of role activities
1	Event 1: Imagining and creating the river delta	<p>1) What kind of sounds do you hear in the delta?</p> <p>2) What does the river delta look like? What is a river delta?</p> <p>3) You are about to create a river delta; what does your delta look like?</p> <p>4) Who are the citizens of the river delta? What kind of people visit or have an interest in the river delta?</p>	<p>Activity 1: Visualising the river delta.</p> <p>Activity 2: Discovering sounds embedded in the Norwegian River Delta and creating music/sound composition with instruments.</p> <p>Activity 3: Signing a group contract.</p> <p>Activity 5: Creating <i>The Norwegian River Delta</i>, drawing a plan before making a 3D-model.</p>	<p>Activity 4: Lecture on river deltas.</p> <p>Activity 6: Teacher educators lecture the students on how to make the delta.</p>
2	Event 2: Characters in the river delta	<p>Activity 7: Introduction to materials for making the puppets.</p> <p>Activity 9: Inhabiting the delta and making role cards.</p>	<p>Activity 8: Students watch a video on how to make the puppets.</p> <p>Activity 10: Lecture on cooperative learning.</p> <p>Activity 11: Lecture on sustainable development.</p>	<p>Activity 7: Introduction to materials for making the puppets.</p> <p>Activity 9: Inhabiting the delta and making role cards.</p>
	Event 3: The competition	<p>Activity 12: A postman announcing a competition rewarding the most innovative project for making the delta more sustainable. Teacher educator in-role.</p> <p>What kind of diversity of people is there in your municipality?</p>		

day	event	key questions	In-role activities	activities	Out-of role activities
3	Event 4: The River delta is in danger	6) What do you think has happened to the Delta and what do you think is causing the pollution?	<p>Activity 13: A disaster or catastrophe occurs in the delta, represented by an offensive smell, causing an evacuation of the inhabitants (students in-role). Teacher educators in role as the local government worker.</p> <p>Activity 14: The inhabitants (students) are then allowed to return to their deltas, which are now covered in garbage. Teacher educators in roles as municipality workers and a scientist. The scientist gives a warning on not to drink tap water.</p> <p>Activity 15: The inhabitants (students) are processing the danger and expressing reactions to it. Cleaning up the deltas.</p> <p>Activity 16: News story on 'radio' explaining the happening for the inhabitants.</p> <p>Activity 17: Consequences for the concept.</p>		
	Event 5: Making a news story	7) What consequences does the happening have on your concept for the competition? 8) What kind of knowledge do you need for communicating news to children?	<p>Activity 18: The editor of 'news for youth' in the national television channel visits, and the students are to make a news story for children.</p> <p>Activity 20: Teacher educator in role as a capitalist, spreading fake news and trying to pay off the students to protect his own business.</p> <p>Activity 21: Preparing the presentation of the concept.</p>	<p>Activity 19: Lecture on how to communicate news to children.</p>	
4	Event 6: Presentations and the jury selecting the winner. A final ceremony of <i>The Norwegian River Delta Storyline</i> . Awarding the winner of the competition.		<p>Activity 22: The inhabitants (groups) presents their concepts and show their news story to the jury. Teacher educators and one agent from Young Entrepreneurship are in role as the jury. The winning project is selected.</p>	<p>Activity 23: The groups disband.</p> <p>Activity 24: Exhibition of deltas, puppets and concept-products.</p>	

## Methodology and Research Design

### Data Collection and the Participants

The study adapts to a social constructive framework when collecting and analysing data, where knowledge is understood as situated, constructed and interactional (Berger & Luckmann, 1967). The study is part of a larger interdisciplinary research project, *The Storyline Approach in Teacher Education*, which aims to explore Storyline from various perspectives, and educational and didactic levels with the use of varied methodologies. This particular study is based on four audio recordings of the groups' reactions and discussions following the river deltas being polluted (cf. event 4, activity 14–15, Table 1). In addition, the data includes seven in-depth face-to-face group interviews carried out with 22 student teachers who had participated in the Storyline *The Norwegian River Delta*.

The research was approved by Norwegian Centre for Research Data (2019) and conducted in accordance to The Norwegian National Research Ethics committees (2016) and the university college's own guidelines for research data. The students received oral and written information about the aims of the research project, the data collection and analysis. Although the Storyline part of the course was compulsory, taking part in the research was voluntary. The students who participated in the study gave thus informed consent (Silverman, 2014), knowing that they could withdraw from the research at any time without explanations and with the assurance that there were no negative consequences for them. The written information included a consent form with check boxes to inform us of what sort of data sampling they agreed to. All involved participants have thus agreed to participate in interviews and that we took audio recordings of their discussions during the learning process. To ensure the students' privacy they were instructed to not use their own or other students' names in the interviews, but they did state what courses they were taking and their gender. One final methodological point is that the authors declare no competing interests in this study. We have planned and done the teaching, and the students attend our classes.

To make the *in-situ* data collection feasible during the implementation of the Storyline, students who had agreed to sound recordings were put in the same Storyline groups; five in total. Throughout the Storyline the students remained in these groups. The *in-situ* recordings during the Storyline were collected by placing hand-held recording devices on the tables of the five groups just before the students were supposed to share their in-role reactions (see, activity 15) when discovering that their deltas were full of garbage (see, activity 14). We were in particular interested in the dialogue in this setting to get an impression of the actual teaching situation ('see how others see'), and to gain insight into the students will to play out, "the teaching's game of make-believe" (cf. Willbergh, 2011b, p. 69). The *in-situ* recordings added a depth to the research questions, not possible to grasp through interviews, as they capture the students' immediate reaction and action *in* the situations.

The group interviews were conducted by the researchers immediately after the post Storyline workshops. Of the students agreeing to interviews, two students withdrew<sup>2</sup> their consent before the interviews were conducted, but were replaced by two students who gave consent to participate in the group interviews so that the number of students did not change. The groups were created with a mixed purposive sampling, where each group had three students who specialise in different subjects. The interview groups had a different composition than the groups in *The Norwegian River Delta Storyline*, as we wanted to have as large variation of experiences as possible to increase the variety of perspectives (Bryman, 2016). We were interested in various students’ descriptions of experiences with Storyline in general and with their perspectives on make-believe interpretations in particular (in line with Creswell & Creswell, 2018).

We followed a semi-structured interview guide that posed a set of themes to be explored, using open-ended questions allowing follow-up questions and new ideas to unfold during the group interviews (Bryman, 2016; Kvale & Brinkmann, 2015). The interview guide contained 37 questions, which were divided into four themes, i) the student teachers’ overall evaluation of *The Norwegian River Delta Storyline*, ii) their experiences with the aesthetic elements and imaginative make-believe interpretations, iii) their reflection on the interdisciplinary group composition and group work, and finally iv) their reflections on using Storyline as a creative and imaginative approach in schools. The interviews were conducted in closed group rooms at the university college and lasted for approximately one hour. All interviews were recorded electronically and conducted simultaneously by the teachers and researchers who had implemented the Storyline project. In this case, this gave depth to the conversations, as the interviewer during the talk could ask relevant follow-up questions and clarify questions (cf. Kvale & Brinkmann, 2015, p. 170–171).

The audio recordings from both the interview and the *in-situ* recordings were transcribed by a professional transcriber following predetermined procedures. The audio was transcribed as closely as possible to the content, but in a formal written form and anonymised so that no names of students or teacher educators appeared in the transcriptions. Afterwards, the transcriptions were compared with the audio recordings to ensure high validity (cf. Creswell & Creswell, 2018, p. 483). We did this by comparing the transcription of the central dialogue with the original audio files and found the transcriptions to be satisfactory for the purpose of the study.

### **Analysis of data**

The analysis of the data was based on Creswell and Creswell’s (2018, p. 193) framework for qualitative and inductive data analysis and comprised three different phases. In the first phase, we read the entire data set to gain an overall sense of the meaning of the transcribed texts. Sections where students’ implicit or/and explicit reactions upon their make-believe (as-if) experiences (cf. Willbergh, 2017) were identified, marked in the

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2 One of the students could not attend because of work, and the other one withdrew without giving any explanations.



text, and then discussed in the research group. In this first phase, initial codes arose. Then, we picked the fullest and qualitatively most interesting interview, marked relevant sections and discussed tentative categories based on a combination of *in vivo* codes (Corbin & Strauss, 2015, p. 85) along with more theoretical labels. In the second phase, the more detailed analysis evolved, using a computer-assisted qualitative data analysis software program *QDAMiner 5* from Provalis Research. An extract from this coding process, is shown in figure 1. The transcribed interviews were imported using a Word format (illustrated in the middle of the figure). The program allowed for creating/developing codes in the left margin. The margin to the right gave an overview of the data coded. This program helped us managing, coding and analysing the data.

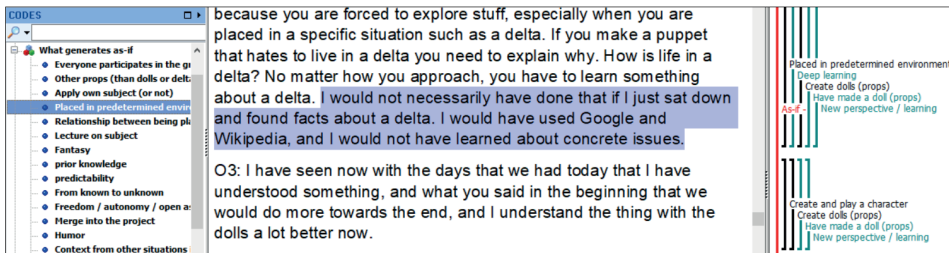


Fig. 1: An extract from the process of coding data using the software program QDAMiner 5.

During the process, where data was compressed and units of meaning were identified and labelled, we ended up with a list of 48 codes. To ensure that the coding was consistent throughout the analysis we developed a coding book (Creswell & Creswell, 2018, p. 202). In the third and final phase, the codes were categorised and developed into more abstract themes. Table 2 illustrates the whole process (phase 1–3). The first column contains extracts from raw data (the interviews), column 2 cites the name of the document (i.e. Case #1–3), units of meaning are shown in column 3, whereas tentative codes, codes and themes are covered by column 4–5.

Tab. 2: Examples from the process of coding data

Raw data	Document	Units of meaning	Tentative codes	Themes
When we build a river delta, and someone trashed it, it was like a glimpse of how it would feel if it had happened for real.	Case #1	The river delta felt as if it was real.	Making delta.	The making of the frieze and the handheld puppets.
I think it was fun to make hand puppets and to see how the personalities evolved into the person you wanted to be.	Case #2	Developing personalities.	Making hand puppets.	
When the Delta was trashed, I entered into my character, and said, 'my hand puppet is concerned with garbage and selective sorting of waste'. It became like, 'I can do this'. I used myself, to figure out what my puppet could do in this situation.	Case #3	Student playing out the roles.	Students entering into a character's role.	Taking on fictional roles and role-playing.
When the teacher came with the yellow vest and was so worried, I thought there was something serious going on.	Case #2	Students experiences of teachers in role.	Teacher in role.	

In the third phase of the analysis four themes emerged, capturing how make-believe experiences are created by second year student teachers as part of a Storyline, 1) The making of the props: the frieze and the handheld puppets, 2) Taking on fictional roles and role-playing, 3) Applying, sharing and using each other’s knowledge, and 4) Perceiving activities as if they were pupils. These four themes constitute the results of this study, and will be presented below.

## Results of the study

This part of the chapter presents the results of the study relating to how imaginative make-believe experiences unfold through *The Norwegian Delta Storyline*. The overall picture emerging through the analysis of data is that Storyline, as exemplary teaching with use of props, seems to activate subjective facets in these student teachers’ learning. The study discovered four different components that appear to be contributing to make-believe experiences, outlined below.

### The making of the props: the frieze and the handheld puppets

Our joint analysis shows that make-believe experiences are created from the students’ own involvement in the products of imagination, which in this case comprises a Norwegian river delta and its inhabitants. This included the making of examples (props); the development of the frieze; the miniature models of river deltas (see activity 5) and the creation of the hand puppets; the inhabitants living in this delta (see activity 7–9). One of the students (interview group five), describes the relation between the making of the props and the imaginative make-believe experience as such, “I think it is important when you are taking part in a Storyline, that you actually make props. You cannot just claim that, ‘I live in a delta’; you need the specific delta to *make believe* you actually live there.” Another student (group 6) explains how the hand puppets came into play in the learning process,

I think you learn more about yourself [by being in a role]. The hand puppet helps, because you are forced to explore stuff, especially when you are placed in a specific situation such as a delta. If you make a puppet that hates to live in a delta you need to explain why. How is life in a delta? No matter how you approach, you have to learn something about a delta. I would not necessarily have done that if I just sat down and found facts about a delta. I would have used Google and Wikipedia, and I would not have learned about concrete issues.

Some students explicitly describe a willingness or openness to the tasks involved in the making of props. One student (group 3) put it like this, when expressing how important the props were to his immersion in the activities,

The more you just allowed yourself to merge into the project, [the more fun it became]. I committed, I just decided that – ‘I am going to give life to this Nike sock’, and the

more I developed my character, the weirder he became, and in the very end, he became somewhat of a lone wolf. You must dare to take part and just let go, or else it gets boring.

Further, group work is perceived as important for the development of the props. Especially when crafting the handheld puppets, group members seemed to help one another to create the inhabitants living in the delta, illustrated as follows,

I noticed that my hand puppet came to life because we talked with each other in the group, like ‘who are you?’ so my peers helped me create a lot of personality for my character. I would say that we played on each other and developed the roles together.

These handcrafting techniques did not create make-believe experiences themselves, but prepared the ground and conditions for the students to be experiencing “as-if” when, for example, the disaster hit the inhabitants (“them”!) in the delta (see event 4). However, issues relating to time appear to be a challenge for nearly all the students interviewed. They express a feeling of being overwhelmed and unsatisfied; having too little time to accomplish too many tasks. One student claimed that the process was “characterised by too little time [...] I was not able to make as much effort as I could have, and I was constantly struggling with my conscience for the rushed work”. This might reduce the experience of “as-if”.

### **Taking on Fictional Roles and Role-Playing**

The role-playing part of the Storyline where the fiction was played out, helped to create imaginative and intensive make-believe experiences engaging the students in the specific activities. This comprised both the parts where the students themselves entered into a character’s role (see activity 13, 14, 15, 16, 18 & 22) and the parts where the teachers took on roles (see activity 12, 13, 14, 18, 20 & 22). The majority of the students interviewed experienced playing out the fictitious story as challenging, but in the end, very meaningful. One of the strongest “as-if” experiences reported in this study, is thus when the students *in* their roles, found the river deltas being polluted (activity 13, cf. picture 6). The following statements where one student describe this particular experience, can serve as example. The student (group 3) emphasises a special relationship between the delta (cf. prop) and learning of sustainability (cf. curriculum content), generated by make-believe,

When we build a river delta, and someone trashes it, it was like a glimpse of how it would feel if it had happened for real. [...] As you spend time developing something, and then it is polluted, even though the delta was not fully real, you get that feeling; because it is happening to you directly [...]. So, I enjoyed this event because it gave me insight into the topic.

Another student (group 2) utters,

When the delta, in which we had invested great effort to develop, was trashed, what came to my mind was just ‘Wow!’ I am not Christian, but let’s say God did create the



Img. 6: Garbage on the frieze. An example of a polluted delta (cf. activity 13). Credits: Hanne Eik Pilskog.

earth, and, suddenly, there's garbage everywhere. It is poetic. [...] [a fellow student continues] It was awful seeing all that garbage ruining what we had spent so much time creating. It is awful to see the earth being littered.

In regards to the teachers' role-playing, one student (group 1) describes as follows how this helped the students commit to their roles,

Watching the teachers daring to take on fictional roles and deeply committing themselves to the story being played out, I think it made the students' involvement easier. It was cool to watch [them acting out]. [...] [A fellow student continues] in my group, one of the rules in advance was that everyone committed as far as possible to immerse oneself into the story. And it worked out, and it fun when the teachers were involved.

In general, involvement in the fiction highlights that the open and creative parts of the Storyline, were, by these students, contrasted to more common activities applied in traditional methods used in teacher education, as one student claims, “our program is influenced by traditional lectures, and I snore to death”. However, the analysis also showed that a few students reported a feeling of impatience, when participating in *The Norwegian River Delta Storyline*. They felt the project was a waste of time and declined to take the imaginary and creative work with the examples or props seriously.

### **Applying, Sharing and Using Each Other's Knowledge**

One of the main aims of using TSA within this programme of teacher education was to facilitate curriculum learning relating to the cross-curricular subject sustainable de-



velopment. When analyzing the data, it became evident that students' perception of the utilisation of their own subjects, either it being arts & crafts, physical education or natural science, affected the potential for experiencing "as-if", being the third discovered component. Most of the interviewed students felt that their own subjects came into play during the learning process, gaining new perspectives on curriculum content. One student (group 3) describes the satisfaction experienced when she suddenly recalled her prior memories of mathematics, during a task where they were supposed to recall their prior knowledge of 'delta'

I was shocked because we were talking about mathematics and delta 'x' and 'y', and suddenly everyone was shocked, 'what, was that it?' I thought I just said some nonsense, being completely off when I used my mathematical competency, but actually it was correct? That was fun that you unexpectedly see the connections.

The students appreciated having experienced a real cross-curricular approach to learning that required everyone to share their knowledge and cooperate in order to accomplish the tasks, and to understand the complexity of the phenomenon. One student (group 1) acknowledges,

It was fun to be the whole class. To meet people studying Norwegian and English, a bit more fun to be in a group with different subject combinations. I think that it was a nice way to get a comprehensive understanding of sustainable development. I hope and believe that the perspectives presented in this Storyline, get more people to think about these issues.

Another student (group 7) explains how they made use of each other's competencies,

In my group, the five students covered all the subjects in our program. In that way it was clear how we should distribute the tasks. [...] When working on the delta, the students with mathematics in their portfolio for example explained what a delta is<sup>3</sup>, while the people with social science could share other perspectives relevant for the tasks, and together we became pretty skilled!

Nevertheless, a few of the students interviewed, felt that the Storyline did not add any new curriculum knowledge and that the project was irrelevant for subject matter, voiced as follows by one of the students, "I just didn't feel any of my subjects was represented in this project".

### Perceiving Activities As If They Were Pupils

The analysis shows that imaginative make-believe experiences are created when, by engaging in the activities, the students understand the learning experience from the

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3 The Greek uppercase letter delta is symbolised as a triangle ( $\Delta$ ) and gave the name to river deltas because the shape of the rivers are reminiscent of this symbol. In mathematics uppercase letter  $\Delta$  is used to denote change.

children’s perspective. When the students were reflecting on their own learning in the interviews, they drew parallels between their own experiences and what they thought pupils in school would appreciate relating to curriculum content. Most students were positive that pupils would be highly engaged in the events that Storyline facilitate, and this *knowing* appears to work as a catalyst for wanting to make-believe. One student (group 6) says,

I believe that when using TSA in school, you are doing so many activities that you can reach a lot of pupils. It differs what the pupils think is exciting [...]. So, I believe that this is a real opportunity to get *all* the pupils engaged in something they will find exciting and educational.

Analysis shows that through reflecting on the value *for* pupils, they recognised the potential for their own personal engagement through make-believe experiences. This is illustrated by the following statement, where a student acknowledges that because of the imaginative handheld puppets, pupils are forced to explore different perspectives, especially as they are to live in a specific environmental spot, like the delta,

I had a lot of fun pretending that I made my alter ego with that hand puppet. Like I was an influencer etc. and really superficial, and it was fun. But at the same time, I also had issues dear to my heart [a student colleague continues] Yes, so, it gives you the possibility to choose matter near your heart. [Or something contrary to your values] and if someone wonders, you can say ‘it is not my opinion, it is my puppet’. Anyhow, the pupils can choose new personality trait far from their own personalities.

In general, the students express that the pupils will learn more about themselves through Storyline as a cross-curricular approach to teaching and learning because of the creative and imaginative parts.

## Discussion

Methods on how to create good learning situations is important for future professional learning and identity development. Part of this learning includes the student teachers’ knowledge of how to meet tomorrow’s skills and competencies defined as the 21<sup>st</sup> Century skills (Bellanca & Brandt, 2010), but also to understand challenges relating to a more sustainable future, defined by United Nations sustainable development goals (UN, 2018). In this particular study, we have paid attention to *mimetic didactics* (Willbergh, 2017); a new perspective on how TSA can contribute to learning through the activation of imaginative make-believe interpretation of examples. By analysing teacher students’ experiences, considered in the four audio recordings of the groups’ discussions and seven group interviews, we found that make-believe interpretations were created in four different ways. In the following, structured by the theoretical framework, the results of the study will be discussed.

### Recalling Prior Memories of the Subject Matter

Meaningful make-believe experiences of creative interpretations of *examples* rely on students' ability to build new knowledge on prior memories of the subject matter (Willbergh, 2017, p. 619). The teacher's effort in transforming and building knowledge on what the students previously know is important for the students' meaning-making process. *The Norwegian River Delta Storyline* included one seminar on sustainable development in advance of the Storyline. The seminar was meant to serve as a common learning platform for the students as it addressed various perspectives on the topic chosen for the Delta-Storyline, and to direct the students towards recalling their prior memories of the subject matter in line with Willbergh's (2017) theory. Almost all the students interviewed appeared to appreciate the seminar as valuable for recalling prior knowledge and learning about the topic. However, only one student explained how she used her prior mathematical knowledge in the making of the delta, and uttered that it was gratifying that she "unexpectedly saw the connections".

Furthermore, the students appeared to acknowledge the value of using each other's competences for obtaining a comprehensive picture of sustainability issues. Nevertheless, based on the analysis, some students experienced the Delta-Storyline as adding somewhat less new knowledge, and some students even felt that Storyline lacked relevance for their subjects. Making sure the student's specialist subject stay in focus is crucial for their ability to adapt to the imaginary work and hence contribute to personal development in order to enable a process of *Bildung*. The subject matter must constantly be brought to mind, so that the examples or props can "be deliberated on by drawing consequences for real and future life" (Willbergh 2017, p. 619). One student claimed that *The Norwegian River Delta*, was very relevant for "the social sciences, but as my subjects are physical education and mathematics, I have not been able to draw any connections to my subjects at all". This expression underlines the self-referential and highly individual aspect of meaning-construction (Willbergh, 2011b, p. 67).

However, as students are expected to build new knowledge on what they have previously learned (Willbergh, 2017), this is interpreted as a challenge in regard to the students' meaning-making process within this particular Storyline. The fact that the Delta narrative made connections to familiar actualities, such as water, nature and plastic pollution, strengthens connections to many of the students' credibility reference. The students' engagement in the pollution of the Deltas, showed that it was "*as-if*" the students lived in the Deltas for a short period. Hence, this Storyline narrative managed to engage the students deeply into the challenge of specific aspect of sustainable development, and moved beyond the platform of instruction, which, according to Wagenschein (2000), is a prerequisite to facilitate exemplary teaching.

### Capturing the Student Teachers' Attention through the Selection of Concrete Examples

From a mimetic perspective, it is the teachers' selection of concrete examples that according to Willbergh (2017) allows for both the interpretation "*as-if* they are real to the students (it concerns me!) and '*as-if* they are subject matter" (p. 618). It is the example's

separation from the real world that “makes it possible for students to see the world in new ways” (ibid., p. 617). In *The Norwegian River Delta Storyline*, the students were tasked with the making of two types of props (constituting event 1 and 2); the models of a river delta and handheld puppets representing the inhabitants of the river delta (activity 5 and 7–9). The examples served as a catalyst for the students’ learning process, as they aimed at creating various perspectives of a ‘fictional truth’ and transforming these perspectives into different interpretations of subject matter.

In addition, the examples created ‘*Bildung* in motion’ as they engaged the whole student in bridging their connections to the real world by trashing the deltas with garbage from the students’ local community (cf. Wagenschein, 2000). The *delta* for example, with the trash, represented a concrete medium connecting a particular environment (a Norwegian river delta) to the subject matter (the subject of sustainability). In this way, the Storyline appeared to activate students’ preconceived knowledge of river delta and sustainable development with its features by contextualising a familiar situation for these students. The river deltas represent objects of imagination for the students, “as-if” it was the place where the students lived when engaging in this creative learning process. The constructed inhabitants of the delta with the students’ living environment bridged together the known past and the unknown future. In particular, the environmental destruction and waste pollution represented a make-believe situation in a classroom context engaging the students as if it were a “real-world” experience happening to their communities.

The challenge of this Storyline was to reveal the connection between the props, as a medium of message, and the students’ preconceived knowledge. In this case, the students’ preconception of how waste pollution represents an environmental threat to ocean and river ecosystems was useful. However, based on the analysis of audio recordings of the groups’ discussions and the interviews, the props engaged the students’ attention fully, and facilitated imaginative make-believe interpretations; “as-if” for them, the prototype of the river-delta here and now is their local river-delta. Like one of the students claimed when the river-delta was trashed, “it was like a glimpse of how it would feel if it had happened for real”. One reason for this feeling to arise, as we interpret the data, is that the students developed all the examples themselves concentrating deeply on the creative activities. In the making of the props, they connected with the prop, like one of the students explained, they needed to create the delta, “to make believe you actually *live* there”. The importance of the students having been part of this process, is emphasised by Willbergh (2017), who claims that if “the students themselves are contributing examples from their own experience, the chances are greater that the object can be perceived as recognisable” (p. 619).

The analysis has shown that the time-issue was experienced as a hindrance for being in the imaginative process of making the examples. For the examples in teaching to represent reality, student teachers must have the ability to enter into the imaginative work, allowing make-believe experiences to occur (c.f. Willbergh, 2017). More time spent on the creation of the prop might make the student teachers more satisfied or prouder with the props and this in turn, could help the students commit themselves to the story being played out. Wagenschein (2000), in his exemplary teaching, underlines



the importance of the learner being deeply affected, in contrast to the *getting-through-it* approach that tends to dominate subject teaching in school (p. 168). Further, teacher educators must thus take into account the fact that the process of making examples and playing out fictional characters, are something many students are unfamiliar with (cf. Karlsen et al. 2019a). Some of the students might not have been role-playing since primary school, and according to Leming (2016) some students don't have what it takes to enter into the role of a character. If the use of examples is to contribute to meaningful make-believe experiences, some students would probably need quite a bit time, and in such occasions concrete help with developing, for example, characters. The time issue is also addressed by Karlsen et al. (2019b) arguing that student teachers in general need time to open up to the experience of TSA, and that more time may allow for more discussions and reflections, which is particularly important when applying open-ended questions.

### A New Perspective on Sustainability?

The selection of examples generated a temporary feeling of commitment to the environmental challenges they encountered in the Storyline; most evident in event 4 when they discover that the delta had been polluted. One student described it as, “you get that feeling; because it is happening to you directly”, another student put it like this; “It is awful to see the earth being littered”. We interpret these feelings as real-world experiences, “as-if” it was their local neighbourhood environment that was flooded with garbage, made possible because of the props; engaging and contributing to *Bildung* in motion (Wagenschein, 2000, p. 172).

In the Storyline this common-sense knowledge is developed further by key question six *What do you think has happened to the Delta and what do you think is causing the pollution?* Key questions in a Storyline, are open questions to drive future learning activities (Bell & Harkness, 2013, p. 13), and thus play a vital role in triggering students' reflections and active participation (Omand, 2014, p. 5; Omand, 2020, chapter 14 in this anthology). From a mimetic perspective, such questions are worth asking, as they make “students aware of the relevance of school knowledge” (Willbergh, 2017, p. 621), in ways that enable them to connect this knowledge to prior knowledge, theories and the overall subject of sustainability. Furthermore, they can activate knowledge about the local delta, and/or a Norwegian River Delta, as the *story* is about Norwegian residents. Based on our interpretation, the students express that they learn more, or they are allowed to dig deeper into the topic of sustainability, compared with traditional teaching, because of the engagement with the props and the ability to engage in the activities, particularly through open-ended key questions. Nevertheless, as the data collection occurred during and immediately after the Delta-Storyline, it is impossible to know *if* the students actually will *act* in new ways in the future concerning environmental challenges. The ultimate result of the meaning-construction in teaching is according to Willbergh (2017) that the “subject matter is experienced as meaningful to the students [and that] they will have gained a new perspective on the world” (p. 619). The purpose of teaching is life-long learning, to “understand self, world, and society for the sake of

democracy” (Willbergh, 2017, p. 624). This empirical study confirms the findings of Willbergh’s (2017) study, that from a mimetic didactic perspective, the use of examples in teaching can represent a reality; or, in this particular case, a reality of sustainable delta development.

Through the Delta Storyline, the student teachers experienced how subject matter can be transferable to real life situations, by using examples. This experience is perceived as relevant for them, for engaging pupils in high quality learning as future professionals (cf. Beck et al. 2015, p. 447). The use of examples thus created a learning place, experienced as meaningful both within the area of expanding students’ knowledge of sustainability, and developing applicable methods for professional teaching and facilitating deeper learning in a classroom context (cf. Willbergh, 2015; Storhaug, & Eie, 2020, chapter 12 in this anthology). As shown in the results, make-believe experiences were generated, in line with Willbergh (2015, p.34), when the examples activated facets of the student’s learning that not only bridged teacher education and real life, but also had relevance for their future as teachers.

## Conclusion

From the perspective of mimetic didactics, the study aimed to contribute a novel understanding of the potential for using Storyline, as exemplary teaching, in the student teachers’ professional development. The study has gained insight into the student teachers’ willingness “to play the teaching’s game of make-believe” (cf. Willbergh, 2011b). In particular, the study explored how imaginative “as-if” experiences are created through a Storyline focusing on sustainability, implemented in teacher education for second year student teachers. In the study, we find that Storyline, as a creative and imaginative approach to teaching and learning, creates possibilities for student teachers to experience meaningful make-believe interpretation that contributes to a more profound picture of sustainability (as the content of the curriculum). Furthermore, the study shows that the students appear to transform the learning content into professional competence, expanding the student teachers’ insight into how classroom instruction can be designed for making the school’s content significant and meaningful for life. However, although most of the students reported a positive experience with the imaginative work, not all students experienced TSA in this manner. Factors relating to time issues and perceived lack of relevance for their subjects caused, for some students, a feeling of stress, overwhelm and impatience. Allowing enough time for students to make the examples and finding ways to ensure that the subject matter related to the props is perceived as relevant for the teacher students, are important when implementing Storyline in teacher education with the aim to facilitate learning for sustainability through imaginative work.

Having identified aspects with value for students’ professional teachers’ qualification, the implication for teacher education, as we interpret it, is that student teachers to a larger extent should be involved in a variety of approaches on campus, in order to develop applicable methods for exemplary teaching and classroom instruction. Having experienced, *in practice*, how the use of examples can activate and expand their own

perspectives towards new and meaningful knowledge (cf. Willbergh, 2011b, p. 69), the student teachers are positive that pupils will recognise the potential value for learning; hence bridge the gap between theory and practice, and past and future meaning-construction. In our study, the students seemed to transform the learning content into professional competency which, in this case, includes methods that fundamentally connect school and real life (and school and future). This confirms the result of Karlsen et al. (2019a) who identify a connection between the students' positive experiences with TSA and perceived transfer value to their future practice in school, claiming that participating in TSA, seemed "to have increased students' ownership of the approach and motivation for using it" (p. 157). As Willbergh's (2017) research is carried out in a school context, we would like to add perceived relevance for future professional work as a final aspect of relevance for the meaning-construction of teaching.

Based on this study, we claim that the mimetic didactic perspective thus can contribute to research in the field of teacher education, by allowing for concepts that explain how and why the fundamental elements of TSA (the using of imaginative examples) connect subject matter to real world events. This didactic perspective can also eventually contribute to exemplary teaching on campus which is important for future professional teaching practice. However, further research is needed both to expand theory in the context of teacher education, and to understand how imaginative make-believe experiences works in other types of Storyline. Studies that explore the outcome of student teachers' implementation of examples through TSA in schools are also needed.

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