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Simulation Exercises in Police Education, Why and How? A Teacher's Perspective

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Abstract

Context: This study is about the teaching method of simulation exercises and is set in a police education context. Simulation exercises are a central part of Swedish police education, and therefore it is of interest to explore how they are used, and for what purpose, by investigating police teachers' perceptions of this teaching and learning method. Police teachers are police officers who work as teachers at a police education unit on contracts lasting a few years, but which can be extended, and they usually lack any formal pedagogical training.

Approach: In this study, the exploration of the use of simulation exercises was conducted through an inductive approach which included semi-structured interviews with 12 police teachers. The analysis was carried out in several steps. To promote impartiality in the initial data analysis the researcher first stayed close to the data and connection with the findings of previous studies was only considered in the latter stages of this analytic process.

Findings: The findings show that the police teachers perceive that the overall purpose of simulation exercises is for students to apply specific content taught in courses, both physical techniques and methods, and more theoretical knowledge, in the fluid context of scenarios relevant to police work. The results also show that the teachers are aware that the purpose of the exercises is stated in the planning documents, but because they inherit the designs from previous teachers, they may not be aware of the underlying details of it or what is to be achieved in the scenario. The findings also demonstrate that the teachers

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learn the craft of designing and performing simulation exercises and develop their roles as teachers through an informal workplace learning process that involves tacit knowledge developed through working together, and by talking to and observing each other.

Conclusion: The paper contributes to the field of simulation exercises in vocational (higher) education in that the findings can provide educated arguments for the need for scholarly discussions on simulation exercises as a pedagogical tool that supports student learning, as well as arguments for why formal pedagogically-oriented continuing education on the design and implementation of simulation exercises where learning is in the foreground may be needed to support police teachers' professional development.

Keywords: Simulation, Education and Training Opportunity, Police Training, Learning Activities, Vocational preparation, Vocational Education and Training, VET

1 Introduction

This paper deals with simulation exercises in police education and focuses on police teachers' perceptions of this teaching and learning method. The starting point for this study, and an argument for its significance, is that in order to enable the development of the practice of simulation exercises, we need to increase the understanding of how such exercises and their usefulness for educational purposes are perceived by the teachers who use them in their teaching. In simulation and exercise literature, a few different terms are used to denote this teaching/training method. "Simulation" often involves some sort of technical artifact (a simulator) in the scenario (e.g., Davies, 2017 – a shooting simulator), and "exercise" is often used to describe larger so-called "full-scale scenarios" with role players (e.g., Andersson & Lindström, 2017). However, there are no clear and shared definitions of, or boundaries between, these terms.

Simulation exercises are a central part of Swedish police education (Söderström et al., 2022), and are used both in the teaching of specific subjects, such as weapons and tactics, restraint techniques, conflict management and criminal investigation, as well as in larger-scale exercises that often involve several different subjects and last longer than a lesson (Sjöberg et al., 2019). In this paper, the term "simulation exercise" includes both the nature of the event, i.e., simulation (representation) of a relevant part of the professional practice, and its purpose, i.e., to practice and/or learn something new. Simulation exercises as referred to here, however, are mostly about police students training to solve police work tasks in different scenarios with role-players (both hired actors and other students) acting out key roles. Most of the time, these scenarios are focused on everyday situations rather than on disaster situations. The police teachers who use simulation exercises in their teaching are employed by the police education unit on fixed-term contracts, usually ranging from two to five years.

Against this background, another argument for the significance of the study is to increase the understanding of the process of how police teachers develop their competence in designing and implementing simulation exercises, as it is such a central teaching method of the basic police training program.

The methodological approach used in this study involves an inductive process where semi-structured interviews with police teachers were used to explore their perceptions of simulation exercises. Using an approach inspired by Gioia et al. (2013), the data was produced in several steps and the data structure and analysis are presented, showing how the findings and analysis are based on the data material. In this inductive approach, this work with the data is done before previous research is used to analyse the findings and situate them in a wider context. This approach is used to avoid the analytical work (what can be known) being influenced by what is already known (see Gioia et al., 2013). Methodologically, this deviates from a traditional way of working with interview studies, where one first positions the study theoretically in relation to previous research and then performs the analyses based on this positioning. However, as a researcher in the field of teaching and learning (pedagogy), I have a point of departure that involves seeing learning as something that emerges in practice, which includes, among other things, that learning is defined as a social activity rather than something that is limited to taking place in the head of the learner (c.f. Boud & Hager, 2012; Boud & Rooney, 2018). Such a practice perspective of learning questions the often-used acquisition and transfer of knowledge metaphors (Boud & Hager, 2012; Hopwood, 2016). It also includes that practice is constituted by both the socio-cultural traditions that provide a certain stability and is continuously recreated by the participants as it unfolds (see e.g., Hopwood et al., 2016). As Boud and Hager (2012, p. 22) state: "The notion of practice provides a holistic way of thinking that integrates what people do, where they do it, with whom and for what purpose. It links the person with the activity and the context in which the activity occurs".

Although the research field of simulations and exercises is quite extensive, the pedagogy behind simulation exercises and their alignment to the specific purposes they serve has only rarely been problematised and theorised, even though there have been calls for such research in the literature (e.g., Berragan, 2011; Dieckmann et al., 2007; Hopwood, et al., 2016). Therefore, the study's empirical focus is to explore the police teachers' perceptions of the purpose of simulation exercises and, as well as on their perceptions of how they themselves have learned the practice of simulation exercises, i.e., how to design, organise and conduct such exercises. I argue that the findings presented in this paper are useful as they contribute to a better understanding of police teachers' perceptions of simulation exercises as a teaching tool and that the findings could form a basis for discussions on how simulation exercises and their use can be understood and possibly further developed, and how teachers can develop their simulation pedagogy to increase the effect of these exercises.

Against this backdrop, the purpose of this study is to increase the understanding of the teaching tool of simulation exercises in police education by exploring police teachers' understanding and perceptions of the use of such exercises in their teaching practice, why they are designed the way they are and how the teachers themselves have learned to design and lead simulation exercises during their contract time as a teacher at the police education unit. The specific research questions are:

- RQ1: How do police teachers make sense of simulation exercises as a teaching tool?
- RQ2: How do police teachers develop their simulation exercises practice?

1.1 Related Research

This section provides the basis for the study by describing previous research related to simulation exercises and teachers/instructors' competencies and professional development.

1.1.1 Simulation Exercises

The review of previous research shows that the body of simulation and exercise research has a variety of orientations, and many different concepts are used in the field. Exercises are used for different purposes, including the development of knowledge and skills (Sjöberg & Inzunza, 2022; Skryabina et al., 2017; Wyszynska Johansson & Andersson, 2024), including both technical and non-technical skills (e.g., Eklund et al., 2021). Exercises can also be used to train collaboration between organisations that sometimes work together, such as police, rescue services and ambulance personnel in emergencies (Andersson & Lindström, 2017; Carlström et al., 2019; Eklund et al., 2021). Exercises are also used for testing various kinds of capacities and plans (see Andersson & Lindström, 2017; Skryabina et al., 2017).

When looking at the design of simulation exercises in previous research, various designs emerge depending on the purpose of the exercises. The handbook on simulation exercises in EU public health settings presents two major groups of simulation exercises used to test emergency preparedness (European Centre for Disease Prevention and Control [ECDC], 2014), viz, discussion-based exercises, including table-top exercises, workshops or seminar-based exercises (terms may vary), and operation-based exercises, including drills, functional exercises/command post exercises and field exercises.

Research on simulation exercises specifically focused on the police has addressed the impact of different interventions and techniques. Bennell and Jones (2004) reported on the effectiveness of use-of-force simulations in Canadian policing, and Davies (2017) used a teaching intervention for police recruits aimed at developing use-of-force decision-making

skills in a case study that involved participation in a simulation exercise using a shooting simulator to assess use-of-force. Söderström et al., (2022) looked at how the use of virtual police cases to prepare students for simulation exercises affected the outcome of the exercises. Werth (2011) focused on how scenario training affected the development of police students' higher-stage' thinking skills. Sjöberg et al., (2019) studied what students in secondary roles in scenarios, other than police officers, learn from participating in exercises. Sjöberg, (2014) showed how complex a simulation exercise can be for participants and how they need to orientate themselves in a hybrid situation that is both educational (where they are students), and a professional one (where they are police officers). Andersson (2016) studied a student emergency collaboration exercise involving police-, ambulance and fire brigade students and exploring boundaries that emerged between collaborating organisations in exercise activities and how these boundaries could be understood and used for learning. What also emerges from the review of previous research in a police practice and police education context is that it is often the researcher who has designed the intervention being tested and that, as a result, there has not been much focus on the teachers'/instructors' perceptions and the design of the simulations.

There are certain differences between simulation exercises used in an educational and vocational context and those intended for professional participants, as students lack "real" experience from professional practice. Breckwoldt et al. (2014) defined simulation learning as follows:

Simulation learning denotes learning with a safe educational environment, in which some form of reality is simulated. Learners have to learn and act within this environment (...). Simulation learning is a practice-based, close-to-authentic kind of learning within a learning environment which permits the design of systematic instructional efforts. (Breckwoldt et al., 2014, pp. 673-674)

Further, Chernikova et al. (2020) conducted a meta-analysis of 145 empirical studies on simulation in higher education and were able to draw the conclusion that simulations were one of the most effective means to facilitate learning of complex skills across domains (Chernikova et al., 2020).

However, there is also pedagogically-oriented research showing that the use of simulation exercises in an educational context is a highly complex endeavor which is often oversimplified in both research and practice. From a practice theory perspective, Hopwood et al. (2016) question the view that simulations, if designed realistically enough, will automatically bridge the gap between work practice and educational practice. Such a view often involves both traces of a 'mirror logic' and the idea that what can be learned can, and should, be specified in advance and preferably assessed using clear assessment protocols. This, the authors argue, is hard to predict in advance as it is difficult to know precisely how a simulation scenario will unfold due to its social character (Hopwood et al., 2016; Rooney et al., 2015). Instead, the

authors argue that simulations should be seen as a pedagogical tool that is used more freely in relation to the work situation simulated. This kind of practice-based approach moves away from instructional design and argues instead for a focus on learning design. Such a design foregrounds materiality, bodies and emergence through performance, which enables links between prior learning, workplace experience, the simulation students are currently involved in and future learning through reflection and discussions ("what if") (Hopwood et al., 2016). However, these authors, and others (see e.g., Berragan, 2011; Dieckmann, 2009; Rooney et al., 2015), argue that such changes in approach to simulation exercises also involve questioning that such exercises, despite their face value, will in themselves automatically lead to learning, and that more theoretical work on simulation pedagogies is needed.

1.1.2 Teacher/Instructor Competencies

It has also been argued that the design and application of exercises in educational contexts need to be further developed (see Berragan, 2014; Dieckmann, 2009; Hopwood et al., 2016). Such development concerns pedagogical issues and the competence of the instructor/teacher who organises and conducts the exercises. This knowledge has been described as "simulation competencies" and includes pedagogical design, how to support learning, and how to deal with issues of relevance, realism and the hybridity of a situation (Rystedt & Sjöblom; 2012; Sjöberg, 2014).

Dieckmann et al. (2012) conducted an interview study with instructors and educators about success factors for, and barriers to, successful use of simulation exercises. Their findings showed that educators stated that their own competencies, the attitude, motivation and openness of participants and the learning atmosphere were success factors, and that a lack of willingness on the part of the participants to actively engage in simulation and time pressure were barriers. One conclusion drawn from that study was that, in order to support student learning, there is a need for specific competencies among both teachers and students to deal with issues in connection with simulation exercises (see also Rystedt & Sjöblom, 2012).

1.1.3 Professional Development of Teachers

Learning how to design, organise and conduct simulation exercises can be seen as part of a teacher's continuous professional development. Boud and Hager (2012) describe that professionals mostly learn, informally, through their work practice by dealing with challenges that occur in their everyday work and not by formalised learning. As the concept implies, informal learning does not involve formal training or planned continuing education. Although there is no clear boundary between formal and informal learning, a distinction can be made for contrasting purposes. Informal learning emerges in the activities of everyday work and is described as located within a work practice (Billett, 2004; Boud & Hager 2012). In the

corpus of research literature, informal workplace learning is characterised by its social and collaborative nature, which includes sharing of knowledge in the workplace and reflections on actions performed there (Boud & Rooney, 2018; Sjöberg & Inzunza, 2021; Tynjälä, 2008).

Teachers' professional development through informal workplace learning has been specifically studied in previous research. In the literature, teachers' professional development is described as something that changes an individual and is always connected to the learning of a specific practice (Kyndt et al., 2016). Being a competent teacher therefore implies a good knowledge of the subject matter and of how things are done and arranged at their workplace (see Boud & Hager, 2012). Teachers' informal learning in a police education context was the focus of two studies (Sjöberg & Holmgren, 2021; Holmgren & Sjöberg, 2022), which reported on the value that police teachers placed on informal learning activities and how central such activities are, both for their professional development and for the development of their teaching practice. The teachers described a professional transformation from instructor to a teacher with more pedagogical knowledge that took place over time. The authors also demonstrated that the triggers of informal learning activities can be intentional, for example when someone is facing a challenge in their work and seeks help, or spontaneous, for example, when a discussion in the lunchroom gives rise to a new idea or way of performing a task.

2 Research Design and Methods

This section describes the methodological approach of the study, the context, the participants and how data was collected, collated and analysed.

2.1 Methodology

The methodological approach applied in this study for studying the phenomenon of simulation exercises in police education was to explore the teachers' perceptions of that practice. An inductive analysis approach inspired by Gioia et al., (2013) was used in the study. Patton (1980) describes this type of analysis as follows: "Inductive analysis means that the patterns, themes, and categories of analysis come from the data; they emerge out of the data rather than being imposed on them prior to data collection and analysis" (p. 306). The approach was to initially avoid applying theories and concepts which might lead to important knowledge emerging from the informants being overlooked, and instead aim at developing new concepts, based on the data. Methodologically, this stance means that previous research or theories are not used until the analysis has been grounded in the empirical data. As Gioia et al., (2013, p. 21) put it, "[...] one might also term this stance as 'willing suspension of belief' or witting (as opposed to unwitting) ignorance of previous theorizing in the domain of interest". Only when this step is completed are the findings positioned and discussed in relation

to relevant previous research. A starting point for this approach is that the people who are working in a specific practice are the ones who understand it best, and they can therefore be seen as "knowledgeable agents" (Gioia et al., 2013). By the term concept, I refer here to an expression or notion that captures the phenomenon under study and is of theoretical interest. The overall methodological focus can be summarised as staying close to the empirical material and giving a strong voice to the informants (see Gioia et al., 2013). In a later section, I will demonstrate how the data and the development of concepts are connected and, in the discussion, summarise how this analytical work helps to answer the research questions.

2.2 Context

The research context is a Swedish police education unit which offers the basic police training programme. Basic police education in Sweden consists of a two-and-a-half-year commissioned programme located at five different universities. The programme content is governed by a syllabus designed by the Swedish National Police Authority, but the police education units have a certain degree of freedom to make their own decisions about the teaching content and design. The first two years of the programme are located at a university and the last six months are spent in probationary training in the police authority. Swedish police education can be described as a mix of vocational and higher education (see Green, 2018 for a more extensive description of Swedish police education). The police education unit studied provides both a campus-based and a distance-based mode. The campus-based program had been running for over twenty years and the distance-based one for four years at the time of this study. In the last few years, political decisions to increase the number of police officers in Sweden have resulted in an increased number of students on the program, and the unit has also provided a number of variants of the basic training for different kinds of specialists. The programme comprises theoretical subjects such as law, political science and behavioural sciences, and police subjects such as weapons and tactics, communication and conflict management, mental and physical preparation, car driving, and use of computer systems and radios.

2.3 Participants and Sampling

The participants in the study were police teachers working at the police education unit. Police teachers are employed on fixed-term contracts at the police education unit. They have often been instructors in the police organisation but usually lack any formal pedagogical training. At the time of the data collection, the police education unit employed 40 police teachers, all of whom were invited to participate. However, to ensure a certain level of teaching experience, the participants should have been teaching for at least two semesters. A total of twelve teachers who met the criteria agreed to participate; six women and eight men. Their age ranged between 31

and 62 years and their teaching experience between one to 18 semesters. Five of the recruited teachers can be described as inexperienced teachers, with a maximum of one year of teaching experience at the unit. The sampling for the study was voluntary (Robinson, 2014) and participants could opt out at any time. Purposive sampling (Silverman, 2010) was also used in the recruitment in order to ensure that there were "knowledgeable agents" among the participants.

2.4 Methods Used

The police teachers who volunteered to participate signed a consent form and were informed about the terms of participation and anonymity prior to the data collection. The empirical material used in this study was drawn from semi-structured interviews with the teachers and their lived experiences of simulation exercises as a teaching/pedagogical method for expanding students' learning of police work. Interviews offer rich possibilities for participants to reflect in depth on the phenomenon in focus and to co-produce narratives about their experiences (see Kvale & Brinkmann, 2014). The interview method used in this study can be described as a "focused discussion" between the researcher and the informants, where the latter were encouraged to reflect freely on the different themes in the interview guide, rather than as a strictly questions and answers approach (as Kvale and Brinkmann [2014] put it, the interviewer is seen as a "traveler"). The interview guide was a close operationalisation of the research questions and contained the following themes relating to the informants' work practice in police basic education: 1) Background question 2) The purpose of simulation exercises 3) Content and focus of the training in simulation exercises, 4) Students' learning in and from simulation exercises, 5) Teachers' role in simulation exercises, 6) The design of exercises and their history (i.e., why they are designed the way they are) 7) How the teachers have learned how to design and perform simulation exercises. The interviews for the current study lasted between 30 and 45 minutes. All interviews were conducted by the author.

2.5 How I Worked With the Material

Inspired by an approach proposed by Gioia et al. (2013), I used procedures that aim for qualitative rigor, and I wanted to present findings that demonstrate the connections between data and emerging concepts and discuss the findings grounded in the data. The interviews were conducted face-to-face and the audio was recorded. After verbatim transcription and overall reading of the interviews, the analytical work began. The interviews were inductively analysed in several steps - see Figure 1 (c.f. Braun & Clarke, 2006). After familiarization with the data, the interviews were first openly coded in a first-order analysis. This process was iterative, alternating between reading the transcribed material and reviewing the codes. I tried to stay close to the informants' narratives and focus on their first-hand experiences (i.e., how they understand, and/

or discuss, a particular phenomenon). Patterns among the codes were then identified and grouped into themes. In this second-order analysis, the process became more researcher-centered and aimed at building on the informant-centric codes from the first-order analysis in order to develop more theoretically-driven themes (concepts) that capture the meaning of the codes. I tried to distance myself from the material and ask two questions to the empirical material in an iterative and comparative process, viz., "What is going on here?" and "How can we make sense of it?" (see Thornberg & Charmaz, 2014). The quotes that were selected to illustrate the analysis were translated from Swedish into English by a translator. The translation was done in consultation with me to ensure that the quotes convey the gist of the interviewees' descriptions, and all translations were reviewed based on how they were originally expressed in Swedish. The quotes that are presented in the findings, include references to which police teacher it concerns (PT and number), showing which of the 12 interviews the quote is taken from (the source).

In the final step of the analysis, the findings were related to previous research. This included discussing the teachers' perceptions of the purpose of simulation exercises and contrasting them with simulation research and using a practice perspective on learning and the concept of informal workplace learning to discuss the implications of the findings in relation to police teachers' professional development.

3 Findings

This section presents the data structure that emerged in the analysis work, followed by a presentation of each second-order theme developed and its empirical connection to the codes.

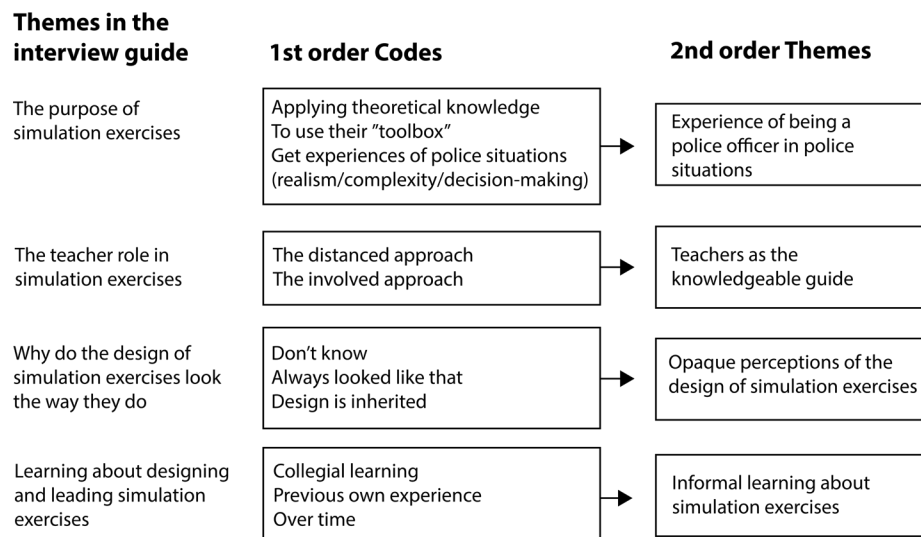


Figure 1: The Data Structure Demonstrates the Process, From the Themes of the Interview Guide to First-Order Empirical Codes, and Second-Order Theoretical Themes (Concepts)

3.1 The Purpose (Theme 1): Experience of Acting as a Police Officer in Police Situations

In the analytic work, the police teachers' accounts of the purpose of simulation exercises in police education and their perceptions of how students learn in and from these exercises had so many overlaps that these themes from the interview guide were merged in the findings. The purpose of simulation exercises is generally that scenario training should, in various ways, help students to apply different kinds of knowledge in practice and give them the experience of acting as police officers in more complex situations. The first code, applying theoretical knowledge, emerged as a commonly shared view in the teachers' accounts, for example, when they talk about 1) learning theoretically about some aspect of police work, such as legal frameworks, criminology, or tactics, and 2) the transfer of skills-training in, for example, physical intervention techniques or communicative skills and then applying these in more dynamic situations. The following quote from an experienced police teacher (PT) exemplifies the former:

(...) it is one thing to study the theory on your own, but when it comes to dealing with people in different types of situations, you need to apply the theory in practice. I think that is very important (...). (PT3)

This quote illustrates the teachers' perception that students need to understand and feel, in their body, the complexity of the work of a police officer, who, as one teacher put it, "experiences many different processes going on at the same time" (PT10). As a result of the perception that students need to experience the inherent complexity of policing, the police teachers also touched on the need to create police situations that are as realistic as possible for the students to experience.

Another purpose of simulation exercises commonly mentioned in the teachers' narratives was putting techniques and skills into a context. In the different practice-oriented subjects, the police students practice skills and develop knowledge of self-defense, police tactics, conflict management etc. A teacher who teaches physical police techniques and methods (i.e., intervention and self-defense techniques) stated:

(...) it is about putting what we do in the training environment into a practical context. To apply it in dynamic environments. The training in the gym can be very static and technical. Now we try to apply it in a more situated manner, the way it should be applied in a police situation. (PT8)

This quote illustrates how exercises are viewed as a method of situating things the students have previously learned in a more static context, such as in the training gym, in a "realistic" and dynamic context, where a lot of things are going on at the same time which a police officer needs to deal with. This makes the use of, for example, correct physical techniques more

challenging. Further, the teachers perceived that police students learning from participating in simulation exercises can be described with the 'toolbox metaphor', meaning that students need to acquire knowledge about which tool to use and when. One teacher described the "toolbox" and "tools" as follows:

(...) the complexity of what it is like to be a police officer. That they (the students) acquire a "toolbox" of techniques and methods, and learn which tool in the toolbox will work for them in a particular situation and how to use it. (PT2)

This quote illustrates the "toolbox metaphor" and the importance of choosing the right tool based on both the nature of a situation and one's own individual capabilities and preferences.

The second code emerging in the teachers' narratives involves the students experiencing the complexity of a police situation and learning how to first assess the situation and then decide what to do (*decision-making*), using the knowledge they have acquired about a specific situation in the different course modules. This is exemplified by the following quote:

Because there are so many situation-specific parameters to take into consideration in a professional situation, which you cannot learn theoretically, such as "(...) but he was over there" or "a car came from (...)" or "the other one said that (...)" or "what should I do if (...)". There is a vast amount of information that needs to be processed in a given situation and you can see that in the students. The complexity in the legislation, in the communication and in the decision-making is unique to that situation. That is what you want them to learn. (PT3)

This quote illustrates the specific knowledge that needs to be merged and applied when participants are acting in an exercise scenario which can be conceived as a realistic and relevant professional situation. The police teachers described simulation exercises as a method of training the assessments a police officer must continuously make in different situations and the ongoing decision-making required to handle such situations. The argument emerging in the findings is that a police officer needs to assess and determine what it is that is going on (the type of situation), and based on that assessment determine what actions to take, and that this is a continuous process, as the initial assessment might be inaccurate. One teacher described this "software" as the most important aim of scenario training: "So, I would say that the main purpose of most exercises is to practice decision-making and communication, to apply those skills in a context and a process" (PT12). This is a quote that highlights the common notion found in the accounts that exercises are a means to train students in decision-making, and that developing one's decision-making skills is a central part of becoming a police officer.

The third code emerging regarding the purpose of simulation exercises is students *getting experience of police situations*. Police situations refer to all the different types of situations that police officers encounter, and the teachers provided specific examples of situations that are quite unique to police work. These can be situations involving threats and violence, or which are stressful in other ways, for instance when a failed intervention or action results in

a negative outcome. One teacher describes how scenario training is a way of getting students to experience situations they probably never have been in before:

For many (students), the worst conflict they have ever had is with their mother five years ago. They have not seen the situations you need to act in as a police officer. If I were to tell them that now, that they should reflect on what it means to be exposed to threats or violence, the students would have nothing to refer to. So, an exercise can be a way to give them an idea of what that can be like and how you feel in such situations. (PT8)

3.2 Teacher Role (Theme 2): Teachers as the Knowledgeable Guide

In the interviews, the teachers were also asked to reflect on their own roles in the planning and carrying out of exercises. Two codes emerged in their narratives. The first one is the distanced approach, in which the teacher's role is mainly viewed as a designer of exercises. This involves being a planner and initiator of exercise activities where their role is more about capturing what happened during the scenario and providing feedback after the scenario has played out and the simulation exercise is over, as exemplified by a quote from this relatively unexperienced teacher: "(...) the students act out the scenario, we give them feedback on their performance, and then they reflect on their actions in the exercise" (PT4).

The second code, the *involved approach*, is a broader and more active approach to the role of the teacher in exercises. It involves coaching and more direct support for the students' learning during the exercise and in the scenario. This is shown in the following quote from an experienced teacher:

Often, I think it's about complementing the exercise in ways that involve a bit more coaching, but in a subtle manner. For example, if I run a stakeout exercise where I am the team leader (in the scenario) (...). Then, if I notice that the students are not making progress, I can support their actions a little bit. For example, if I see them with a suspect and they haven't been able to decide what they can do legally because they have not pieced together the whole "puzzle" yet, and I know that all the information they need for an intervention is there, I might guide them by saying "Okay, has anyone seen the handover (of drugs)? Have these people been in contact with each other?". In that way, I can help them to start putting the "puzzle" together. (PT10)

This quote illustrates a more coaching approach to the teacher's role in exercises. It also demonstrates a view of the exercise itself as something that is not just about letting events and actions play out regardless of what happens, with no interference in the scenario in order to maintain realism. This approach is exemplified in the above quote; this teacher supports the students by taking part in the scenario and guiding them if they are not making progress because they are at a loss for what to do. The interviews also indicate certain differences between the two codes. It seems that the more experienced teachers believe that teachers

should more actively support the students' learning, while most of the less experienced ones who were using the distanced approach saw the feedback after the scenario as the time and place for them to support the students' learning.

3.3 The Design (Theme 3): Opaque Perception of the Design of Exercises

In the interviews with the police teachers, they were asked to reflect on why the exercises they are involved in are designed the way they are. Three codes emerge in the teachers' accounts. Most of them found it difficult to comment on the reasons behind the design of exercises – they *do not know why*. This is the first code. It captures that the teachers had not really reflected on this issue before. As one police teacher put it: "I don't really know, but I think they are well designed because they resemble police work" (PT4). This quote also points to the notion of a common understanding among the police teachers that a realistic representation of the work practice is the basic reason for exercises and thus the reason for their design. The next code that emerges is *tradition*, meaning that the teachers perceive that the exercise designs have always been the same. This is exemplified by a police teacher who stated that "it is difficult to say how a particular design came about, but it is probably based on both tradition and what we think is the best content" (PT7). Further, the interviews mostly demonstrate that the exercises the police teachers are involved in and use in their teaching were already there when they started working at the police education unit, i.e., the designs are *inherited*. This code is demonstrated in the following quote:

I think that many of the large-scale exercises (not scenarios in everyday training) are inherited. We started using them once upon a time and there was a basic reason for their design and how they should be organised. We just use them and there is very little time to redesign them (PT12).

This quote illustrates that the police teachers' perceive that they 'inherited' the exercises already in place when they started working at the police education unit and that they do not feel that they have time to reflect on their designs. They seem to be taken for granted. However, while the teachers were aware that there were documented plans for the exercises containing overarching aims, they did not seem to have acquired any deeper understanding of their design.

3.4 Learning the Practice (Theme 4): Informal Learning About Simulation Exercises

It emerges in the interviews that the police teachers had difficulty describing in any concrete way how they learned to plan and carry out exercises. Based on what appears in the findings, this learning process seems to involve tacit knowledge and informal learning processes within

the framework of the work teams. One police officer said: "But there are also some informal aspects, you observe your colleagues and ask them how they run a particular exercise" (PT6). The police teachers describe that learning how to run exercises involves learning from each other in different ways, both in their own teaching team and across teams. This was coded as *collegial learning*. One police teacher also expressed that this knowledge was difficult to acquire just by studying the aims and planning of simulation exercises in the existing manuals:

Because you can't learn that just by studying the exercise manual, you need something more and above all, I think, or know, that we have to be better at observing each other when we run the exercise in order to improve our exercise competence (PT10).

The interviews also reveal that teachers who were relatively newly employed at the unit drew on their experiences from exercises they themselves had previously participated in: "I think sometimes we create exercises without knowing exactly why we choose a particular design, but then you realise that we participated in similar exercises ourselves before starting to work here, and we sort of used that knowledge" (PT2). This quote exemplifies the code *previous own experience*, as the teacher talks about his own experience of participation in similar exercises. Emerging in the findings is also a general perception among the teachers that the knowledge and competence of organising and leading exercises have developed *over time* during their employment at the police education unit. This code is exemplified by a teacher who describes the outcome of this learning process as: "(...) In the end you have acquired a bank of knowledge, you know what you should do in order to succeed in the planning and execution of an exercise" (PT5).

4 Discussion

The present study used an inductive approach to explore police teachers' understanding and perceptions of the use of simulation exercises in their teaching practice, why the exercises are designed the way they are, and how the teachers themselves have learned to design and lead simulation exercises. The purpose of this design was to increase the understanding of this specific and central teaching practice in police education by investigating how it is perceived by those who use it in their day-to-day teaching. The present study contributes to the field of simulation exercises in vocational education in that the findings can provide educated arguments for both scholarly discussions on simulation exercises as a teaching and learning tool, as well as for the possible need for formal continuing professional development for police teachers regarding the design and implementation of simulation exercises that are learning-focused. In the following, the findings are discussed in relation to the research questions and related to previous research and a practice theory perspective on learning. Finally, the study limitations and suggestions for future research are presented.

4.1 RQ1: How Do Police Teachers Make Sense of Simulation Exercises as a Teaching Tool?

The findings show that the police teachers perceive that the purpose of simulation exercises is for students to apply specific content taught in courses, both physical techniques and methods and more theoretical knowledge, in the fluid context of scenarios relevant to the police work practice. These findings are not surprising and in line with how the purpose of simulation exercises is described in related research where participants have been shown to develop both knowledge and skills by participating in exercises where the content of theoretical elements of the training is put into practice (cf. Andersson, 2016; Chernikova et al., 2020; Skryabina et al., 2017). The findings also show examples of police teachers' perceptions that simulation exercises offer students the opportunity to experience the complexity of police work, and provide training in assessing situations and deciding on different actions based on their assessments. Such decision-making skills were perceived by the teachers as something the students need to develop. These findings indicate similarities with previous research within the police context in that exercises are seen as an opportunity to develop the students' so-called "software", including decision-making skills in different police situations (cf. Benell & Jones, 2004; Davies, 2017).

Although on a personal level (i.e., in the interviews), the police teachers can describe how they perceive the overall purpose of simulation exercises and also the aims formulated for specific larger-scale exercises they use in their courses, the findings show that there are ambiguities and uncertainties when it comes to the origin of the designs. In previous research, exercise design often includes a briefing, the scenario, and some debriefing activities (see e.g., Dieckmann et al., 2012; Eklund et al., 2021), which is in line with descriptions emerging in this study. However, the teachers often seem to be unsure why the exercises they use are designed the way they are, i.e., the deeper reasons behind the design are not always clear to them. Statements in the teachers' accounts, such as "this is how the exercise was designed when I started working here", indicate that exercises are inherited from previous teachers. This phenomenon is understandable, considering that the police teachers often work at the police education unit for a limited time (on fixed-term contracts) and with a busy day-to-day schedule find it convenient to use someone else's simulation exercise. Thus, even though planning documents include descriptions of the overall purpose of a particular simulation exercise, they do not provide any deeper explanation for why it is designed the way it is, and what is supposed to happen in the scenario. Further, when the thoughts behind a particular exercise design are unclear or not described at all, this presents another challenge for a vocational education such as the basic police training program. If a teacher does not continuously question and reflect on how an exercise should be designed to give the students the specific content intended, there is a risk that the teacher's own personal preferences will decide the

focus of the exercise, and that the students' learning experience will be different than that originally intended.

The analysis shows that the police teachers perceive their role in simulation exercises as being the "knowledgeable guide", which captures the notion that their role involves guiding the students' learning. The findings show that this can be done in different ways; after the scenario through feedback on the student's actions and the reasons behind their decisions, or through more active participation in the scenario. The analysis also indicates certain differences between the teachers. It seems that some of the experienced teachers tend to be more actively involved in the scenarios, providing support for the students' learning 'in situ', while the less experienced ones seem to be more inclined to let the scenarios run their course and then focus on providing feedback after the exercise. The analysis did not reveal any gender differences in the teachers' perceptions of simulation exercises.

Although previous research has rarely problematised the teacher's role in the context of simulation exercises, one can find arguments for supporting student learning with a more flexible approach to the role of the teacher (e.g., Sjöberg, 2014; Rystedt & Sjöblom, 2012). Chernikova et al. (2020) discuss the potential added value of support, and state that teachers, by taking over some elements, can support the learner "(...) to solve problems through modifying tasks and reducing possible pathways, and through hints helping the learner to coordinate the steps in problem solving or interaction" (p. 505). However, they also propose that this needs to be done in relation to prior knowledge. It could be argued that this might be more relevant in more complex scenarios where it may be necessary to guide the students towards the purpose of the exercise in order to avoid them getting stuck on something that is not relevant to the purpose of the exercise.

4.2 RQ2: How Do Police Teachers Develop Their Simulation Exercises Practice?

The findings demonstrate that the teachers learn the craft of designing and overseeing simulation exercises and develop their roles as teachers through an informal workplace learning process that involves tacit knowledge developed through working together, and by talking to and observing each other. They do not receive any formal pedagogical training in how to run and design exercises, but learn from their colleagues and use their own previous experience of participation in simulation exercises. Previous research on how teachers learn the simulation practice has not been found in the literature reviews conducted for this paper. However, the findings of this study are connected to research on informal workplace learning and how professionals mostly learn, i.e., informally by dealing with challenges that occur in their everyday work, rather than through formalised learning (see Billet, 2004; Boud & Hager, 2012; Sjöberg & Holmgren, 2021). In line with previous research, this study shows that professional

development at work is characterised by its social and collaborative nature, which includes sharing of knowledge in the workplace and reflections on actions performed (Boud & Rooney 2018; Sjöberg & Holmgren, 2021; Tynjälä, 2008). However, based on the findings that indicate conservatism, one question to ask is whether the teachers' informal learning when it comes to simulation exercises can be seen as preserving the way such exercises have "always" been carried out, or whether there is room for development opportunities without any formalised pedagogical support for the teachers. I argue that this study shows that the teachers working at the police education unit on fixed-term contracts need the support that well-planned formalised pedagogical continuing education can provide.

What, then, does all this mean? The findings show that there is interconnection between the two research questions. The informal ways in which the police teachers learn the simulation exercise practice appear to be potentially problematic due to the fact that previous teachers' designs are often reproduced. This risks making exercises somewhat less effective or at least different, as the ideas behind specific arrangements and set-ups are not clear to the teachers. I argue for a need to further educate the teachers who come from an instructor background (see Sjöberg & Holmgren, 2021; Holmgren & Sjöberg, 2022 for further discussion) and to provide support for their professional development in more formal ways. In such continuing education, connections can also be made to the purpose of simulation exercises. Using a practice perspective on simulation exercises, a broader and more fluid understanding of such exercises and how to use them can be achieved. Such theorisation can go beyond discussions about how realistic scenarios need to be and questions the "out-there" – "in here" mirror approach and instead focus on what is relevant to include for pedagogical purposes (Dieckmann, 2009; Hopwood et al., 2016). An understanding of how different practices (professional/educational/simulation exercises) are present simultaneously in a particular situation and to pedagogically alternate between them can enable students to learn in practice by acting in the scenario, and also learn about the practice by reflecting on 'what if' questions with support from the teacher (see Hopwood, 2016; Hopwood et al., 2016). Such theorisation can also change the perspective on learning from the often-used concepts of "acquisition" and "transfer" of knowledge and skills to an understanding of learning as embodied and enacted through practice (Hopwood, 2016). This has the potential to change police teachers' view of the purpose of simulation exercises and their own role in them.

Considering these key results, and answering previous research calls for increased theorisation of the simulation exercise practice (e.g., Berragan, 2011), I use two theoretical concepts to capture how the professional development of police teachers who use simulation exercises can be understood. The first is "simulation competencies", denoting pedagogical knowledge of simulation exercises (see Rysted & Sjöblom, 2012). In a previous work (see Sjöberg, 2014), I have used this concept in relation to students' actions in simulation exercises. These competencies include understanding the students' experience of the hybridity of scenario situations

as they are simultaneously students and police officers and move between these roles during a simulation exercise (Sjöberg, 2014). Simulation competencies also include putting learning in the foreground, not just as an instrumental way of designing realistic set-ups where the focus is on specifying knowledge to be used in the scenario, but also as a teaching and learning tool which can support student learning in different ways. When learning is prioritised, the focus shifts to creating learning situations instead of devising exact recreations of professional situations, which, as a consequence, becomes less important (see Dieckmann, 2009; Dieckmann et al., 2007). Using a practice theory approach implies that learning through participation in simulation exercises can be thought of in a much broader sense which, in addition to material set-ups, includes the social dimension of action and affords students with experiences of different kinds (cf., Hopwood, 2016). Here the second concept, "future professional selves", can also be used to deepen the understanding of the design (see Hopwood et al., 2016). This concept points to the opportunity simulated scenarios give students to experience the work practice before they are "real" professionals. It can be a vehicle to help teachers to go beyond a narrow focus on students developing and applying specific and specified knowledge and skills in a scenario and to include elements of developing identity and becoming (a professional police officer) in the simulation exercises.

4.3 Methodological Discussion and Future Research

There are (always) some limitations in the choice of methodology. Interviews provide an understanding of the informants' descriptions of their own understanding of the phenomenon studied. These descriptions could be strengthened by also using methods that capture the simulation exercise practice as it unfolds 'in situ'. Observations and/or video recordings could have been used for this purpose, which also is a suggestion for future research. To observe the police teachers in their natural setting working with this teaching and learning practice, including how they plan and set up simulation exercises and how these are then performed and followed up. Another suggestion for future research is to further explore the views of the police teachers in this study on student learning. It might be interesting to study how they understand and describe learning generally, and the learning process in the context of simulation exercises specifically, as this forms the basis of the entire teaching practice and their view of their role as teachers.

4.4 Implications

In summary, this paper contributes to the field of simulation exercises in vocational (higher) education in that the findings can provide educated arguments for the need for scholarly discussions on simulation exercises as a pedagogical tool that supports student learning. The

results also have implications for organisers of basic police training, as an argument as to why formal pedagogically-oriented continuing education on the design and implementation of simulation exercises where learning is in the foreground may be needed to support police teachers' professional development. Especially if the teachers, as in the Swedish context, only work with police training for a limited time before returning to the police organisation and therefore do not have the opportunity to develop this knowledge through informal workplace learning.

Ethics statement

The principles of IJRNET's ethical statement have been implemented in this study, including the adherence to the principle of informed consent. This means that all respondents in the study have given their consent being aware of the nature, objectives, and potential risks of the study.

References

- Andersson, A. (2016). Boundaries as mechanisms for learning in emergency exercises with students from emergency service organisations. *Journal of Vocational Education & Training*, 68(2), 245–262. <https://doi.org/10.1080/13636820.2016.1166450>
- Andersson, A., & Lindström, B. (2017). Making collaboration work – developing boundary work and boundary awareness in emergency exercises. *The Journal of Workplace Learning*, 29(4), 286–303. <https://doi.org/10.1108/JWL-05-2016-0039>
- Bennell, C., & Jones, N. J., (2004). *The effectiveness of use-of-force simulation training final report*. Carleton University.
- Berragan, L. (2011). Simulation: An effective pedagogical approach for nursing? *Nurse Education Today*, 31(7), 660–663. <https://doi.org/10.1016/j.nedt.2011.01.019>
- Berragan, L. (2014). Learning nursing through simulation: A case study approach towards an expansive model of learning. *Nurse Education Today*, 34(8), 1143–1148. <https://doi.org/10.1016/j.nedt.2014.03.005>
- Billett, S. (2004). Workplace participatory practices: Conceptualising workplaces as learning environments. *The Journal of Workplace Learning*, 16(6), 312–324. <https://doi.org/10.1108/13665620410550295>
- Boud, D., & Hager, P. (2012). Re-thinking continuing professional development through changing metaphors and location in professional practices. *Studies in Continuing Education*, 34(1), 17–30. <https://doi.org/10.1080/0158037X.2011.608656>
- Boud, D., & Rooney, D. (2018). The potential and paradox of informal learning. In G. Messmann, M. Siegers & F. Dochy (Eds.), *Informal learning at work: Triggers, antecedents, and consequences* (pp. 131–152). Routledge. <https://doi.org/10.4324/9781315441962>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>

- Breckwoldt, J., Gruber, H., & Wittmann, A. (2014). Simulation learning. In S. Billett, C. Harteis & H. Gruber (Eds.), *International handbook of researching professional and practice-based learning* (pp. 673–698). Springer.
- Carlström, E., Berlin, J., Sørensen, J. L., & Magnussen, L.-I. (2019). Collaboration exercises in emergency work: Outcomes in terms of learning and usefulness. In L. I. Magnussen (Ed.), *Disaster, diversity and emergency preparation* (pp. 147–154). NATO Science for Peace and Security Series, Human and Societal Dynamics. <https://doi.org/10.3233/NHSDP190033>
- Chernikova, O., Heitzmann, N., Stadler, M., Holzberger, D., Seidel, T., & Fischer, F. (2020). Simulation-based learning in higher education: A meta-analysis. *Review of Educational Research*, 90(4), 499–541. <https://doi.org/10.3102/0034654320933544>
- Davies, A. J. (2017). Shoot/do not shoot - what are the influences? The police recruit perspective. *Policing & Society*, 27(5), 494–507. <https://doi.org/10.1080/10439463.2015.1077835>
- Dieckmann, P. (2009). Simulation settings for learning in acute medical care. In P. Dieckmann (Ed.), *Using simulations for education, training and research* (3rd ed., pp 40–138). Pabst.
- Dieckmann, P., Gaba, D., & Rall, M. (2007). Deepening the theoretical foundations of patient simulation as social practice. *Simulation in Healthcare: Journal of the Society for Medical Simulation*, 2(3), 183–193. <https://doi.org/10.1097/SIH.0b013e3180f637f5>
- Dieckmann, P., Friis, S. M., Lippert, A., & Østergaard, D. (2012). Goals, success factors, and barriers for simulation-based learning: A qualitative interview study in health care. *Simulation & Gaming*, 43(5), 627–647. <https://doi.org/10.1177/1046878112439649>
- European Centre for Disease Prevention and Control. [ECDC] (2014). *Handbook on simulation exercises in EU public health settings: How to develop simulation exercises within the framework of public health response to communicable diseases*. ECDC.
- Eklund, A., Saveman, B.-I., & Gyllencreutz, L. (2021). Situational awareness during a full-scale exercise in an underground mine: A qualitative single-case study of the ambulance incident commander. *International Emergency Nursing*, 54, 100950. <https://doi.org/10.1016/j.ienj.2020.100950>
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods*, 16(1), 15–31. <https://doi.org/10.1177/1094428112452151>
- Green, A. (2018). Police basic training in Sweden: Vocational or academic? An educational muddle. In C. Rogers & B. Frevel (Eds.), *Higher education and police: An international view* (pp. 35–58). Palgrave Macmillan Cham. https://doi.org/10.1007/978-3-319-58386-0_3
- Holmgren, R., & Sjöberg, D. (2022). The value of informal workplace learning for police education teachers' professional development. *The Journal of Workplace Learning*, 34(7), 593–608. <https://doi.org/10.1108/JWL-04-2021-0040>
- Hopwood, N., Rooney, D., Boud, D., & Kelly, M. (2016). Simulation in higher education: A sociomaterial view. *Educational Philosophy and Theory*, 48(2), 165–178. <https://doi.org/10.1080/00131857.2014.971403>
- Hopwood, N. (2016). Practice architectures of simulation pedagogy: From fidelity to transformation. In K. Mahon, S. Francisco & S. Kemmis (Eds.), *Exploring education and professional practice: Through the lens of practice architectures* (pp. 63–81). Springer Nature. https://doi.org/10.1007/978-981-10-2219-7_4
- Kvale, S., & Brinkmann, S. (2014). *Den kvalitative forskningsintervjun*. Studentlitteratur.

- Kyndt, E., Gijbels, D., Grosemans, I., & Donche, V. (2016). Teachers' everyday professional development: Mapping informal learning activities, antecedents, and learning outcomes. *Review of Educational Research, 86*(4), 1111–1150. <https://doi.org/10.3102/0034654315627864>
- Patton, M. Q. (1980). *Qualitative evaluation methods*. Sage.
- Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology, 11*(1), 25–41. <https://doi.org/10.1080/14780887.2013.801543>
- Rooney, D., Hopwood, N., Boud, D., & Kelly, M. (2015). The role of simulation in pedagogies of higher education for the health professions: Through a practice-based lens. *Vocations and Learning, 8*(3), 269–285. <https://doi.org/10.1007/s12186-015-9138-z>
- Rystedt, H., & Sjöblom, B. (2012). Realism, authenticity, and learning in healthcare simulations: Rules of relevance and irrelevance as interactive achievements. *Instructional Science, 40*(5), 785–798. <https://doi.org/10.1007/s11251-012-9213-x>
- Silverman, D. (2010). *Doing qualitative research* (3rd ed.). Sage.
- Sjöberg, D. (2014). Why don't they catch the baby? A study of a simulation of a critical incident in police education. *Journal of Vocational Education & Training, 66*(2), 212–231. <https://doi.org/10.1080/13636820.2014.896405>
- Sjöberg, D., Karp, S., & Rantatalo, O. (2019). What students who perform in "secondary roles" can learn from scenario training in vocational education. *International Journal for Research in Vocational Education and Training, 6*(1), 46–67. <https://doi.org/10.13152/IJRVET.6.1.3>
- Sjöberg, D., & Holmgren, R. (2021). Informal workplace learning in Swedish police education – A teacher perspective. *Vocations and Learning, 14*(2), 265–284. <https://doi.org/10.1007/s12186-021-09267-3>
- Sjöberg, D., & Inzunza, M. (2022). Improving emergency preparedness with a live collaboration exercise model for first responders. *International Journal of Emergency Management, 17*(3/4), 195. <https://doi.org/10.1504/IJEM.2022.10050172>
- Skryabina, E., Reedy, G., Amlôt, R., Jaye, P., & Riley, P. (2017). What is the value of health emergency preparedness exercises? A scoping review study. *International Journal of Disaster Risk Reduction, 21*, 274–283. <https://doi.org/10.1016/j.ijdrr.2016.12.010>
- Söderström, T., Lindgren, C., Sjöberg, D., Söderlund, R., Åström, E., & Widing, M. (2022). The impact of a preparation phase on the development of practical knowledge in police education: A comparison of two conditions for preparing a practical scenario training. *Journal of Vocational Education & Training, 74*(3), 355–372. <https://doi.org/10.1080/13636820.2020.1786441>
- Thornberg, R., & Charmaz, K. (2014). Grounded theory and theoretical coding. In U. Flick (Ed.), *The SAGE handbook of qualitative data analysis* (pp. 153–169). Sage.
- Tynjälä, P. (2008). Perspectives into learning at the workplace. *Educational Research Review, 3*(2), 130–154. <https://doi.org/10.1016/j.edurev.2007.12.001>
- Werth, E. P. (2011). Scenario training in police academies: Developing students' higher-level thinking skills. *Police Practice & Research, 12*(4), 325–340. <https://doi.org/10.1080/15614263.2011.563970>
- Wyszynska Johansson, M., & Andersson, I. (2024). Vocational didactics: Mapping the terrain in Swedish upper secondary vocational education and training. *International Journal for Research in Vocational Education and Training, 11*(1), 76–95. <https://doi.org/10.13152/IJRVET.11.1.4>

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