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# **Video– based debriefing enhances reflection, motivation and performance for police students in realistic scenario training**

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## **Abstract**

The purpose of the study is to explore the relationship between video-supported debriefing and police students' performance in realistic scenario training? Two groups conducted two weapon training sessions. One group used video- based debriefing in addition to the regular debriefing and one did not. The result showed that the students that used video increased their reflection regarding possible solutions to the scenario. The video group also increased their motivation to train the skills involved in the scenario. The expert assesment made by the weapon instructor showed that the video group improved their performance to the second session which was not the case for the traditionally debriefed group.

## **1. Introduction**

The police occupation is quite demanding. As a police officer you can at any time be exposed to threats of deadly violence or actual deadly violence to yourself, colleagues or the public (Andersen, Litzenberger & Plecas, 2002). To prepare students for situations they may meet in their coming working lives simulations are nowadays common in professional training (Issenberg, McGaghie, Petrusa, Gordon & Scales 2005). So is also the case in modern police education in which training in simulations scenarios or in other words in realistic scenarios is a vital part (LittleJohn-Shinder, 2002; Artwohl & Christensen, 1997). A key question for educators in police training is how to manage the scenarios in a way that maximize the learning outcomes for the students. This was also a vital question for us as teachers at the police academy at Umeå University where scenario training as elsewhere was frequently used in the tuition. In this paper we report on findings from a study using video as tool for enhancing students' performance in realistic scenario training. Theoretically the study draws on Schön's work about reflection and learning and recent research on learning in simulations and scenario training. In his work *Educating the reflective practioner* Schön (1987) describes learning as changes in actions, inner structures and processes such as cognition, attitudes and feelings. Using this as a starting point Schön puts the focus on the activity and the reflection by the learner, who has to be active. Schön uses the concepts of reflecting in action, which is sort of thinking on your feet during training, and reflecting on action, which is retrospective and takes place after the training. The goal is to construct knowing in practice were you contextualize your professional knowing in action (Schön 1983; 1987; 1992). Support for reflection as essential in learning can also be found in Moons (2010) overview of research on reflection. She concludes that though the concept is used in different ways it seems, as reflection is a tool that can transcend more usual patterns of thought to enable a critical stance or an overview. Furthermore research on scenario training high-lights reflection as a key feature for success but also setting clear and

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appropriate goals with adjusted proficiency levels, resources for feedback, opportunities to train the skills needed and some tool to measure the outcome of the training. (Gauger Hauge, Andreatta, Hamstra, Hillard & Arble. 2010; Dieckman 2009; Naylor, Hollett, & Valentine. 2009; Ericsson 2008; Stefanidis, et. al. 2007; Heinrichs, Lukoff, Youngblood, Dev, Shavelson & Hasson 2007; Issenberg, et.al. 2005). Aware of the research on realistic scenarios our students already after each scenario training used a structured evaluation/reflection model called After Action Debriefing (Druckman & Bjork, 1994). The aim was to help students to reflect and evaluate their performance in the scenario. To become aware of shortages in their performances and lack of knowledge's and skills that would help them solve the problem in the scenario, but also to highlight what they did well. Now our question was if the students could get more out of the realistic scenario training if we gave them better tools for reflection. Schmidt & Wrisberg (2001) describes different types of feedback, intrinsic feedback and external feedback. Intrinsic is the information you construct yourself, and includes for instance your own feeling and self-correction. External or additional feedback is information that comes from the outside such as verbal or from video. So, maybe video could be an answer to our question. Video has traditionally been used as a tool for feedback in development of technical or motor skills. Guadagnoli, Holcomb & Davies (2002) for instance defines feedback through video as *argued, post-response error information about the movement*. In a major review of studies of high fidelity medical simulations Issenberg et al (2005) conclude that feedback or *knowledge of result of one's performance* is the most important feature and that this can be given post hoc as viewing of video film. Rönnholt, Holgersen, Fink-Jensen & Nielsen (2003) have showed that video feedback can improve the understanding for e.g. communication and interaction in the learning process. Studies also show that video and sound is a form of feedback that can be effective for learning and reflection if the information is clearly related to the learning goals (Hattie & Timperley, 2007).

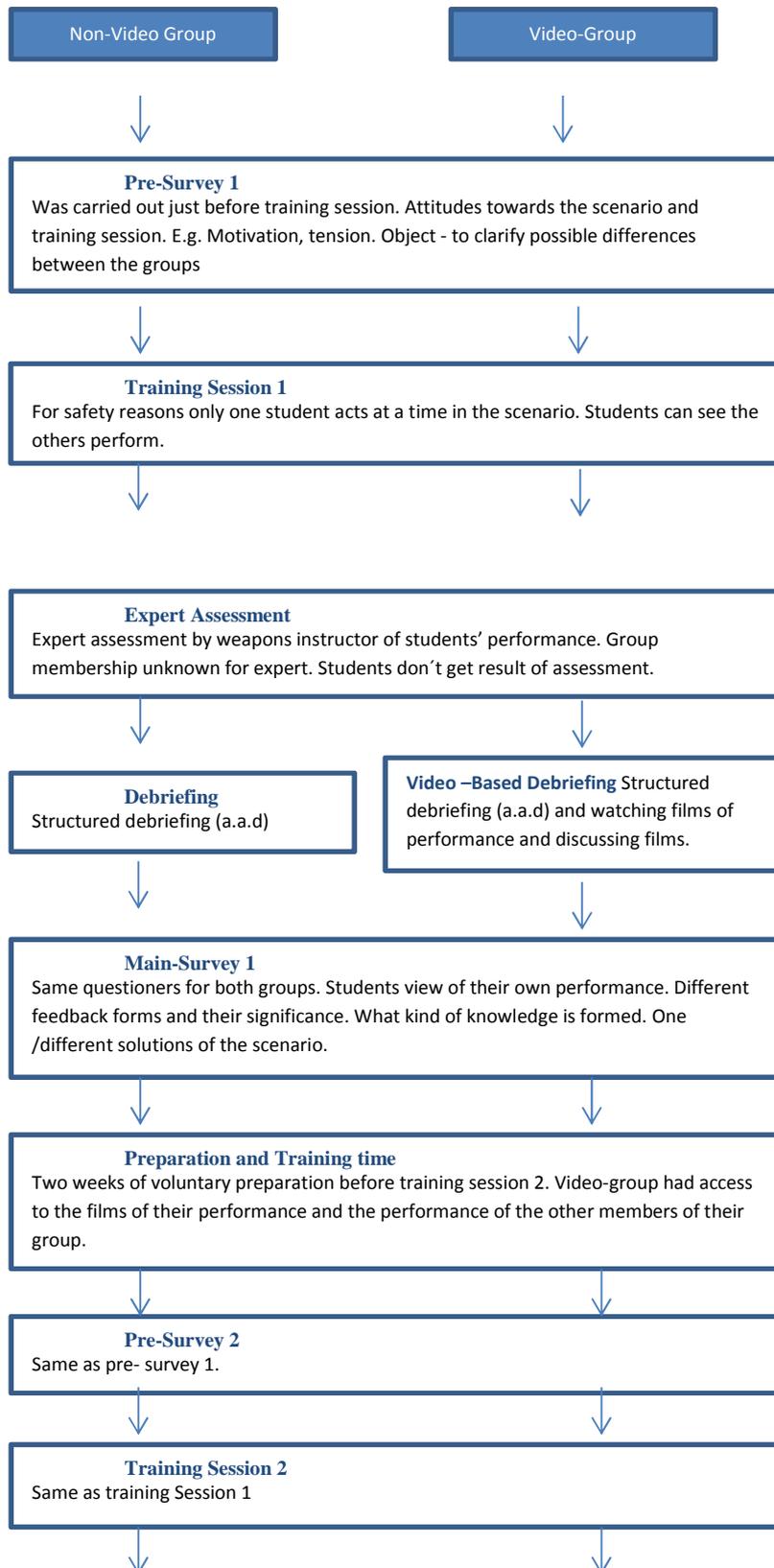
So, drawing on Schöns theories, current research on successful scenario training, and video as a potential tool for enhancing reflection we carried out a study with the aim to explore the relationship between video-supported debriefing and police students' performance in realistic scenario training. Our research question was if video-supported debriefing can improve police students' reflection, motivation and performance in a realistic scenario?

## **2 Design of study**

We created a study design that we saw best fitted to help us examine video-supported debriefings relationship for police students reflection and what that could imply for performance in realistic scenario training. . Data was collected through four different surveys, through expert assessment of performance and through video filming. The questioners included both multiple choice and open questions which have a more qualitative character. During the study we looked at two groups. A total of 12 students participated but due to fall-offs nine participants remained in the study. We choose smaller groups in this study and more data collection in those groups.

The purpose of the pre surveys (1 and 2) was to investigate students' attitudes and opinions about the scenario training at hand and to clarify if any differences existed between the groups. During the debriefing both groups used the structured debriefing (a.a.r). Group 2 had in addition a video-based debriefing were they could see their own and their groups performance in the scenario.

The bulk of data collected from students came in main survey 1 (the same for both groups) and main survey 2 were group 2 had questions concerning what impact video had for their performance and reflection.



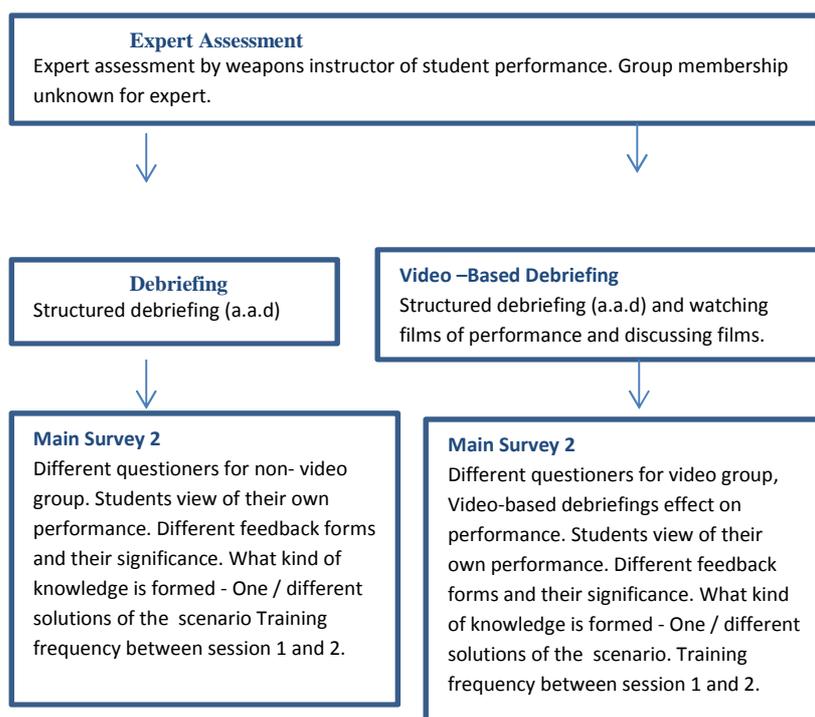


Figure 1. . Overview of study design

After the first training session the students had two weeks to train and prepare for the next session. What they did was totally up to them and without interference of any teacher. Group 2 had access to the videos used in the video-based debriefing. The second training session is not ordinary a part of their program.

In the expert assessment of student performance in the scenario made by the weapon instructor he looked at four different categories. They were weapon techniques, self-protection techniques, tactics and communication. He summed up these categories in his assessment in an overall-performance. The expert did not know which students were in which group to avoid to be influenced in his assessment.

## 2.1 The scenario

In the scenario the students are standing outside an apartment. They command a suspect to come out. The suspect can come out in different ways e.g. armed with a gun, knife or unarmed. The suspect can then behave in different ways. The suspect can try to use force in different ways or obey their command. The suspect can change their behaviour forcing the police student to change their tactics. The student have all their required equipment and are armed with guns (fx – standard gun armed with paintball bullets), and a baton. They act until they get control in the situation or the instructor says break.

## 5. Results

As described above the purpose of the pre surveys was to investigate if any differences existed between the groups regarding attitudes (e.g. motivation, tension) when they started the scenario. In pre survey 1 there were no differences in attitudes between the groups. In pre survey 2, group 2 showed increased motivation for participation compared to group 1.

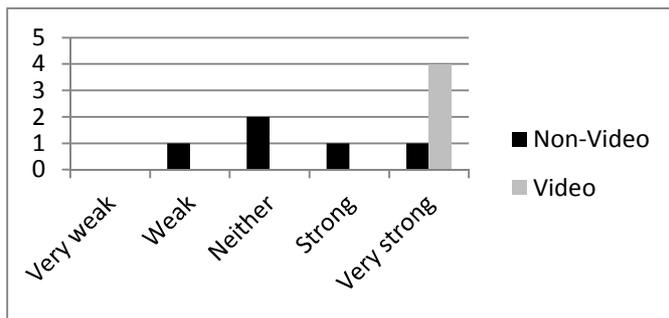


Figure 2. Motivation before training session 2.

When students after the second training session had to rank which factors was most important in the debriefing and preparation period before the session video was the most important factor for the students in the video -group.

Table 1. Importance rank of the reflection and preparation between training session 1 and 2, for performance in training session 2.

<b>Importance</b>	<b>Traditional group</b>	<b>Video group</b>
Most	<i>Feedback from instructor</i>	<i>Feedback from video-debriefing</i>
Second	<i>Knowledge about the scenario</i>	<i>Intrinsic feedback</i>
Third	<i>Feedback from a.a.d</i>	<i>Knowledge about the scenario</i>

Her is also an typical example expressed in the open questions *Great to be able to change what you thought was did not work so well on the video (Student from video – group)*

In open questions in main survey 2 concerning the training period students from the video-group answers expressed both that they seemed to reflect more and indicated that they used the time to actually in greater extent train the skills needed in the scenario.

*The more times you train the more you learn, but then the video was a perfect tool to reflect on your own and others performance in the scenario. (Student from video-group). The video helps me see exactly how I stand, walk and act – I therefore know what I need to practice. . (Student from video-group). Felt that I needed to practice more to get the movements more automated, (Student from video- group).*

When students were asked questions regarding the training scenario itself and possible solutions to the scenario they had to estimate a number of statements. They did not feel that only one “right” solution was presented but rather examples of different solutions. Both groups also expressed that the training session have given them possibilities to reflect on different solutions to the scenario (figure 3).

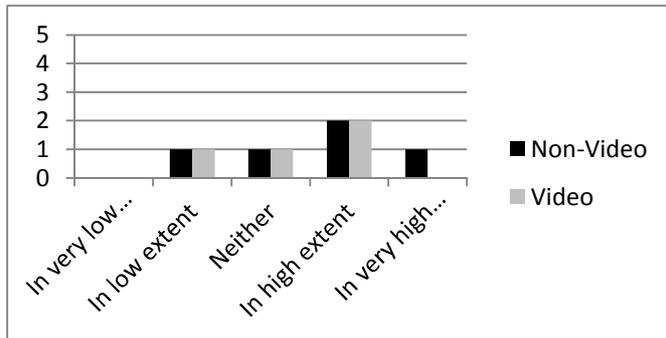


Figure 3. Student opinions if the realistic scenario training sessions have given possibilities to reflect on different solutions to the scenario.

There were no differences in opinions between the groups regarding the training session itself. And they all have been given possibilities to reflect on possible solutions. These opinions were also expressed in their qualitative answers. Is no “right way” of such an exercise. It feels better for yourself to figure out which solution is right for me. With a little guidance, I have in this way been able to find a way that suits me best (Students from the video-group). It has given alternatives, no “right way” answers.

Yes, we saw many solutions to similar situations. You need to see / experience both good and bad to shape your own "good" solution (Students from the traditional group).

When we looked at students’ performance in the scenario we had both their own opinions and the expert assessment by the weapon instructor. We first present students own opinions about their performance in the training sessions (figure 4 and 5) and then the expert view (figure 6 and 7).

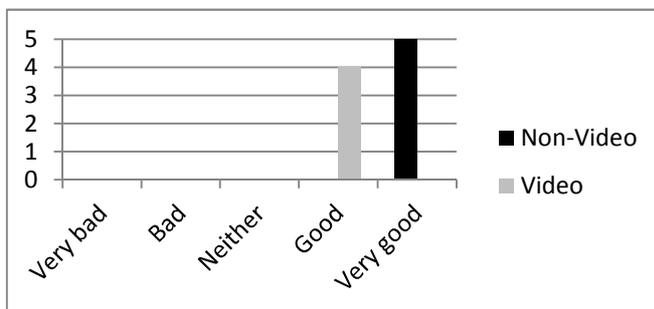


Figure 4. Student opinions about their performance in the scenario – training session 1

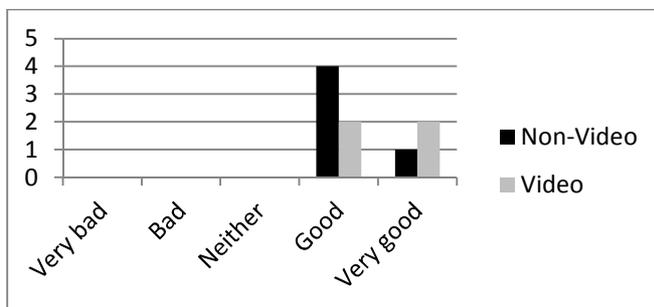


Figure 5. Student opinions about their performance in the scenario – training session 2

In training session 1, they were very pleased with their performance. The traditional group was exceptionally satisfied and the video- group slightly less satisfied. In training session 2 the students in

the traditional group actually thought they performed slightly worse. The video- group felt they performed slightly better. The questions were not formed so they should compare their performance in training session 2 with their first performance. Below we present the expert assesment of student performance in the training sessions (figures 6 and 7).

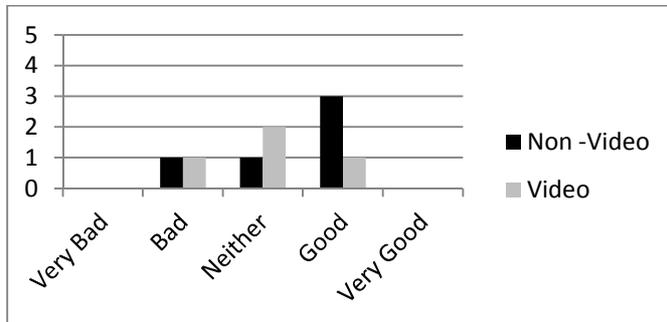


Figure 6. Assesment of performance training session 1.

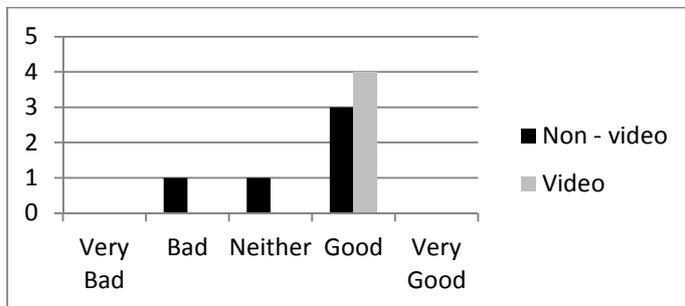


Figure 7. Assesment of performance training session 2

In training session 2 the group that used video-based debriefing had improved their overall performance in scenario. The traditional group had not improved. Their performance was at the same level as in training session 1.

#### 4. Conclusion

The results from the pre survey showed that there seems to be no difference between the groups regarding attitudes towards participating in the scenario training before session 1. After debriefing and the voluntary training period the video-group expressed higher motivation to participate in training session 2. From this we draw that the different design for the video-group effected their motivation in the realistic scenario training. In the study the students expressed that they do not train the skills required to the extent needed.

Our results show indications that the students through the video-based debriefing increased their motivation to actually train the technical skills required during the training time (figure 1) and prepare for the scenario. Both groups expressed that this scenario training in whole helped them become aware of new things such as examples of different solutions to the scenario and that they were given possibilities to reflect on different solutions to the scenario. Both groups expressed this reflection and that it helped them. In quantitative and qualitative answers the video-group expressed that video-based debriefing as very important tool in the aspect of reflection. The videos role of an effective post hoc feedback tool as described in earlier research seems in our results to be met

(Hattie & Timperley, 2007; Issenberg et.al. 2005). If we can validate those results in a more extensive study it can be remarkable as seen from the perspective of learning needs of students.

Base group feedback has been quite important in both groups. It is interesting to see that the students own feelings / feedback (intrinsic feedback and reflection) was considered having a major impact at both training session one and two. This can be understood as the intrinsic feedback and reflection is important. This result is something that current research also highlights as characterising for successful scenario. What does in this aspect video bring then? In the traditional -group that did not use the video as support, the teacher's feedback was of great importance at a both training sessions (a small shift toward less important). In the video- group, there was a change of teacher's role (including feedback) between time 1 and 2, where a reduced significance is clear. What does this mean? How to explain the importance of what the teacher says is declining slightly in importance? A reasonable interpretation is that teacher feedback is replaced by one's own feeling / experience and above all of the video-based debriefing as important for reflection and performance. This result is also explained in a study by Stefanidis, Korndorffer & Heniford (2007), were they saw that video can be a valuable tool for individual learning and mixed with other feedback tools lead to a faster learning. In their study as well as in ours it also seems to reduce the need for other feedback forms.

The most important implication of the study is students' performance in training session 2. The traditional group performed the same in both training sessions. The performance in the scenario was improved by the group that had used video-based debriefing. Our results and conclusion is that this is due to the video-based debriefing which helped the students to clearer se flaws in their performance and skills, improve their reflection of possible solutions of the scenario and become more motivated to train the skills needed to solve the task. But at the same time some questions needs to be raised. Both groups expressed that the scenario in whole helped them reflect on possible solutions to the scenario. So both groups reflect! But what happens? How to specify the explanation of the increased performance of video group? Is it their consciousness of what is demanded in the scenario, which they expressed? Or is it that video-based debriefing increased their motivation both to train the skills needed and also to participate in training session 2? These questions need further studying. It would also be interesting to investigate these learning questions in realistic scenario training for active practitioners instead of students and also to use a more qualitative method for studying the phenomenon again on police students.

Overall the study indicates that video-based debriefing seems to be a valuable tool for reflection, motivation and performance in realistic scenario training for police students.

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