

Social Review as a Tool for Developing Social Skills: Using Contrasting Cases

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Mona Holmqvist Olander^{1,2} and Helen Burman³

Abstract

The aim of this study is to, based on a theory of learning, compare in what ways two different cases of the use of self-monitoring videotapes for developing social skills in adolescents with autism spectrum disorder (ASD) facilitates social behavior studied with a micro-level approach. Two verbal 15-year-old male students with ASD and cognitive disabilities were filmed for 20 min in three different situations. Student A (Adam) was shown contrasting videotaped examples of his desired/undesired behaviors and questioned about his perceptions. Based on variation theory, the conjecture to use contrasts to enhance learning has been implemented. Student B (Bill) was videotaped in three different situations on three different occasions, and his behavior was analyzed before and after the intervention by counting incidents of deviant behavior in all nine videos. Both participants expressed increased awareness of their behavior and were able to sustain change, and Bill decreased deviant behavior in one of the focused situations (practical instruction) from 37 to 3 incidents after 6 months.

Keywords

behavioral sciences, nonverbal, interpersonal communication, human communication, communication studies, communication, social sciences, education, educational measurement and assessment, learning disabilities, special education

Introduction

Previous research has shown that video monitoring (VM) is effective in teaching behavior to students with autism spectrum disorder (ASD) because of their well-developed ability to take in information visually through television (Banda, Matuszny, & Turkan, 2007; Greatz, Mastropieri, & Scruggs, 2006). In a meta-analysis of VM and video self-monitoring (VSM), Bellini and Akullian (2007) found that respondents with ASD are able to copy positive behavior modeled on television (by themselves or others) if they recognize themselves in the film; however, they must already have the ability to act in the desired way and to understand the modeled behavior as desirable. Most early studies used videos to demonstrate the desired behavior to students, who learned by observing and copying. But what happens when the students do not have insight into their own behavior?

A study by Greatz et al. (2006) showed that students who are unaware of their unwanted behaviors have difficulty eliminating it and displaying only the desired behavior. Dratsch et al. (2013) found that people with autism are impaired in detecting direct gaze, and therefore also have a deficit in perceiving social cues. This deficit makes it more difficult for them to develop social skills than it is for people with no such deficit. The aim of this study was to examine how an intervention that focused the respondents on certain cues might help them to develop their social skills. Shulman, Guberman, Shiling, and Bauminger (2012) found that when discussing

social and moral issues, people with ASD showed less flexibility than other people, less abstract thought, and less ability to adapt their judgment to different contexts and situations. They used pictures of undesired behaviors in their study, and compared 18 respondents with ASD with 18 respondents with typical development. The authors discussed the specific implications of these findings for education in the field of social and moral education, but they may have placed too much importance on abstract thinking, flexibility, and generalization to new contexts when trying to understand the respondents' reasoning. There is a risk that individuals with ASD use other ways of dealing with social interactions that we do not yet have tools to capture. Even if there has been found positive results regarding social review, the studies are not explicitly based on a theory of learning. Instead, research on autism has increasingly focused on the development of social skills, and various methods have been tested. Variation theory has previously been used to demonstrate that social skills can be developed in structured situations that allow

¹University of Gothenburg, Sweden

²Kristianstad University, Sweden

³Municipality of Hässleholm, Sweden

Corresponding Author:

Mona Holmqvist Olander, Department of Pedagogical, Curricular and Professional Studies, University of Gothenburg, Box 300, SE-405 30, Gothenburg, Sweden.
Email: mona.holmqvist@gu.se

respondents to discern specific differences between their own behavior and the desired behavior, however not regarding social review (Holmqvist, 1995, 2009). Ayres and Langone (2005) said that “little progress has been made in identifying the critical components of video models and video models and video based instruction” (p. 195), and we have tried to make progress by taking departure from a theory of learning.

In this study, the conjectures in variation theory have been used to analyze what the respondents seem to discern from the material in relation to their changed behavior. The theoretical framework is based on an assumption that learning requires discernment, simultaneity, and variation intertwined in every learning situation (Lo, 2012). The design offers the respondents, one by one, to discern what behavior should be modified. Previous studies on social review have mainly not been based on a learning theory to design the instruction. In this study, the theoretical point of departure was that the respondents needed to be offered simultaneity in the learning situation by showing two different situations (variation) from the same respondent (invariant) and social activity (invariant). By that the aspect that we want them to focus on is varied against an invariant background; two different ways to behave by the same person in the same situation. This is called to design learning situation based on “patterns of variation” (Lo & Marton, 2012), which has been found very powerful in different kinds of instruction (Marton & Tzu, 2004). Results have also pointed out the gain for teachers’ learning to design more powerful instructions by the use of variation theory (Gustavsson, 2008; Holmqvist, 2011; Holmqvist, Gustavsson, & Wernberg, 2008).

The social review method, using VSM, records the student performing one targeted behavior on videotape and analyzes the film with the student, using a guide to structure the learning (Quill, 1995). Several studies have used this method in various ways aimed to make the student aware of his or her behavior (McConnell, 2002). This use of videotape differs from that of VM, in which the desired behavior is modeled to the student, often by another person. In social review, however, the person’s own behavior is usually in focus. It is not difficult in VM to show a person modeling the desired behavior; however, VSM relies on the students’ own performances. If students do not evince the desired behavior in the video, without seeing a clear example or contrast with unwanted behavior they may believe they act appropriately. Bellini and Akullian (2007) showed that VM and VSM intervention strategies met the criteria for an evidence-based study design. Their results showed that it was essential for students to see the desired, rather than the undesired behavior, to raise their awareness and motivation to acquire the model behavior. In their 2007 study, Bellini and Akullian (Bellini & Akullian, 2007) edited out unwanted behaviors and used videos that showed the students the desired behavior only, arguing that the skill should be learned through positive examples. This strategy was also used by Hitchcock, Dowrick, and Prater (2003), who argued that seeing their own success would

strengthen the students’ belief in their capacity to behave appropriately. Hitchcock et al. described the two different approaches:

Observing a superior level of performance that would indicate future mastery of behavior is a key element. The video is constructed by identifying and filming images of a desired behavior and editing to create an “exemplary” sample of the person performing the desired skill. This view is in contrast to “feedback,” which involves review of past or current performance, including errors or deficits. Thus, feedback may include a focus or discussion of errors in performance, which is contrary to the philosophy of building new skills through a positive, errorless approach. (p. 39)

However, some studies use examples of desired and undesired behaviors to encourage change. Greatz et al. (2006) studied a student who had no knowledge of his unwanted behavior. He thought that he behaved appropriately, and thus was not open to a learning situation until agreement was attained between the student and the teacher about the desired behavior. They videotaped his behavior, then edited the videos and showed the student separate films of the desired and the undesired behaviors to clarify and make the student aware of his current behavior. The authors of this study point out the difficulty of making these students understand which behaviors they need to change as they are more or less unaware of their own behavior.

I knew that this differed from what most effective teaching practices encourage; errorless performance that accentuates the positive . . . there was a reason for him to actually see his behavior spotlighted. (Greatz et al., 2006, p. 46)

In the two different videos, one about a minute long caught the student in the desired behavior, and the other captured the unwanted behavior. This method, of course, requires that the student at some point present the desired behavior. In the intervention, the film with the unwanted behavior was shown first to clarify for the student and raise his awareness about how he had behaved. The teacher commented throughout to clarify what the student was doing and what effect his behavior had. The student responded by sitting calmly and saying, “Oh no!” After that, the film with the desired behavior was shown. The teacher commented throughout this video as well. In this case, the student responded by becoming jubilant and saying, “That’s me!” The student recognized himself and showed awareness about the differences in his behavior between the two films. He frequently watched the “good” movie after that, and when he relapsed into the unwanted behavior, a reminder of the “good” movie immediately changed his behavior. This effect, however, requires the student to have an interest in watching television and an understanding of what happens in the videos.

Banda et al. (2007) and Greatz et al. (2006) studied whether people with ASD learn visually and whether they

like to watch TV, and found that they do on both counts. According to Bellini and Akullian (2007), people with ASD like to look at themselves, and this was especially obvious in tapes that showed them succeeding. The results also show that children with ASD find it easier to imitate actors who resemble themselves in some way. Because it is not always possible to capture on video examples of the students performing the wanted behavior, the use of actors with whom they can identify is an important alternative. Greatz et al. argued that the use of videotape is useful in this group because neither eye contact nor social interaction is required. In addition, the use of videotape allows clear delineation of desired (and undesired) behaviors and gives students the opportunity to focus completely on themselves and their behaviors. Banda et al. studied which skills were developed in the target group through video observations and found they were primarily the skills needed in everyday activities (daily living), communication and social skills, which indicated that the use of videotape was an effective method. But academic skills and undesirable behaviors were also positively affected. A main difference between VM and VSM is that any person can play the role in VM, whereas in VSM the pupil in the learning situation enacts the behavior in the films. McCoy and Hermansen (2007) compiled 34 case studies of students with ASD using either VM or VSM. The stimuli were divided into five groups according to the actor of the role in the films: adults, other students (peers) similar to the students in the learning situation, the students themselves performing the desired behavior, hands only visible in a film illustrating the performance of a skill, and a mixture of the four designs. The study showed that films with the most significant influence were those in which the students played the role (VSM), followed by those enacted by their peers.

Although the methods of VM and VSM are time-consuming, results indicate the time is well spent. Banda et al. (2007) argued that it is important for teachers to understand that despite the initial time and expensive technology involved in implementing a video method, VM was in fact economical because the same peer-acted videos could be used for many students with the same needs. Bellini and Akullian (2007) found no clear evidence of difference between the results for VM versus VSM, but that the ability to generalize knowledge seemed to increase with VSM. This was verified by Delano (2007), who compiled 19 case studies of VM and VSM, which showed even in early research on influencing behavior and perspective-taking skills by video analysis, VSM was more effective for developing social skills. Bellini and Akullian conducted a meta-analysis of 23 different case studies of VM and VSM with people with ASD and found that both were effective strategies for strengthening social and communication skills, living skills, and behavior. This was true for children and adolescents with ASD. The results showed that the methods enhanced the ability to acquire skills that were maintained over time,

and that was generalized among students and situations. This result was consistent with results from Hitchcock et al. (2003), who analyzed 18 case studies using VSM with diagnosed and undiagnosed students.

The aim of this study is to, based on a theory of learning, compare in what ways two different cases of the use of self-monitoring videotapes for developing social skills in adolescents with ASD facilitates their social behavior studied with a micro-level approach. The design of the study is based on a theory on learning: Variation theory and the theoretical conjectures have been used to design the instruction. The pattern of contrast has been used to offer the respondents to discern the undesired and desired behavior at the same time to model the wanted behavior.

Method

Two 15-year-old male students who attended a special class in school were chosen to be included in this case study. Both had a diagnosis of autism, along with other cognitive disabilities, and both were verbal and able to understand events shown on a television screen. In the first case (A, Adam), Carol Gray's (1995) method of social review was used, with video recordings aimed at teaching students to "read" social situations and thereby improve their social and communicative interactions with the environment. Because the student in this case believed he already exhibited the desired behavior shown in the video, he was also shown a video demonstrating the undesired behavior to show the difference between them. In Case B, Bill, social review was combined with VSM, as one aim of the study was to model the wanted behavior. However, this method was further developed by adding a contrast between wanted and unwanted behavior by showing two different video clips of the respondent in both kinds of behavior. In Case B, three different situations were videotaped on three different occasions. The first showed a structured manual learning situation (a domestic science lesson) in a large group. This situation was filmed many times to capture desired and undesired behaviors. The second situation that was filmed was a structured theoretical situation in the classroom. This time the students were working in a small group, as they normally did. During the lesson, about four students sat around a table with one or two adults and either worked with their weekly journals and summed up the week's work with text and pictures or played games. The third videotaped situation was during recess, when the respondents had break outside together with other pupils and were free to choose whatever they wanted to do. During the structured situations, one camera on a tripod was placed in the room and directed at the respondent. The unstructured situation required other methods to videotape, because the respondents were moving freely in the schoolyard. The researcher held the camera and followed the respondents during those situations. All films were 20 min long. The films were then reviewed for appropriate clips of desired and

undesired behavior, and a 2-min clip from the structured practical situation (domestic science lesson) was produced, as suggested also by Shukla-Mehta, Miller, and Callahan (2010).

Results

The results of this study show that Adam and Bill, in response to social review with videos, were able to change their behavior and to articulate what they were and were not permitted to do. Analyses of the films showed that the respondents became aware of the focus on their behavior in the learning situation and were surprised when they saw their unwanted behavior in the edited video. The contrast between desired and undesired behavior was clear and helped the respondents to be aware of the difference. At a 6-month follow-up, they still referred to the film clips to modify their behaviors in other situations as well as in the original learning environment.

Case A—Adam

As the videos were played, Adam was asked four questions: (a) Who do you see in the movie? (b) What are the people doing in the movie? (c) Are they talking to each other or are they doing anything together? (Is there some kind of interaction or communication between the people in the movie?) and (d) What do the people in the movie say? It is worth noting that the student saw the movie many times and he discovered new things each time. It took time for him to perceive anyone other than himself. To answer Question 1, Adam needed to see the video sequence only once. To answer the remaining questions, he watched the movie sequence 4 times for each question. In total, Adam saw the sequence 13 times.

The first step was to identify a social situation needed to be improved. A video sequence was selected that showed Adam acting in his accustomed manner in a recognizable situation in the kitchen where he worked. He was impulsive and talked directly to the intercom receiver when he was working in the kitchen. The student's deficiencies in procedural memory made him lose focus easily, forget quickly what he should do and how to do it, and lose control of his movements when talking about anything other than what he was doing at the moment. He was in need of continuous direction from the teacher, which, along with the other factors, became irritating to the adults in the situation, who also needed to correct and direct the student.

The second step was to watch the clip with no sound and ask Adam, the four questions. The questions aimed to collect information about how he perceived the situation with only visual information (the aspect sound was removed). For Question 1, "Who do you see in the movie?" Adam looked all over the kitchen but could not name anyone until he saw himself. Seeing himself seemed to orient him and he was

then also able to recognize the others. Question 2, "What are people in the video doing?" was more difficult. He focused on himself and what he was doing in the video, but did not seem aware of what others were doing. During the second showing of the video, Adam was asked direct questions about what each person was doing, and with such strong orientation toward the targeted persons, one at a time, he was able to answer. However, he needed to watch 4 times to capture what everyone actually did; in comparison, what he seems usually to be aware of in daily life is very limited. He also had problems talking about anyone else than himself in the video, and the third question, "Are they talking to each other or are they doing anything together?" (Is there some kind of interaction or communication between the people in the movie?) was even more difficult than the second. In the clip, Adam talked to the teacher twice, and this he knew because he had turned toward the camera, which the teacher was managing. Although he saw the clip 4 times he could not see that there was no communication or interaction between the others. Of course, the sound was turned off, but he was unable to infer any interaction from actions, expressions, or glances, as people usually do when looking through a window or inside a car.

The last question, intended to gather information about how Adam perceived the situation with sound turned on, was: "What are the people in the video saying?" He could hear that he was talking all the time and that he talked about many things. After having watched and listened 4 times Adam identified that the teacher had asked him to do the dishes. However, he never heard that a classmate had told him several times that he would wash the dishes. He did not notice that two of his classmates were talking to each other or what they said. The analysis of the three initial steps showed that Adam had many characteristics that were typical of ASD. He was extremely self-centered and did not seem to care about what other people said or did. He neither saw any other person nor heard them if he was not very strongly guided, and he had to watch the clips several times for each question to say what had actually happened. The others' interactions and communications seemed to be of no interest to him. This may be explained by his lack of a theory of mind, or it may be due to selective perception caused by the student's brain being unable to integrate all the sensory input adequately (Adler & Adler, 2006). Through his single focus on himself, excluding all the other people and what they were doing, he fit very well the picture of a person with ASD (Frith, 2000).

The fourth step was to compare and share perspectives about the situation in the film. When the teacher and Adam discussed what was different between the expressed awareness of each of them, he became aware of the teacher's interpretation of the video. This shift in perspective made Adam see how he talked constantly and lost focus on his work, and he realized that he should concentrate more on his work. When he said this he seemed to be a bit disappointed

and lowered his head. It was obvious that this was something he had heard the teachers say to him quite often. When he was asked what he meant, he could not find an answer, but said after a moment that he should be quieter. As he seemed disappointed in himself, the situation was changed to make him feel more comfortable. Another film clip showed Adam working diligently. Although he was still talking quite a bit and often, this time he talked about what he was doing or was going to do. The contrast between the clips was clear. He looked happier and he commented that he worked better when he was concentrating on his work, even though he was talking. It seemed that Adam needed to verbalize his thoughts, and did not seem to be aware that in some cases he was disturbing the rest of the class with his loud talking. When viewing the videos, the teacher and Adam discussed (a) the student's loud and careless way of talking, (b) the difference between thinking and talking, (c) the propriety of talking about the task at hand, and (d) the possibility of working without speaking. When the discussion was finished and he was asked about what he had learned, Adam replied, "I must concentrate and work quietly, but I can talk about what I am doing right at the moment." He had apparently always been told, by different adults and in different ways, that he should be quiet and concentrate, but no one had really sat down and tried to sort out and clarify in detail how Adam understood this and what he should do instead. Because he is not severely mentally retarded, people seemed to take for granted that he understood what they meant and that he could see himself from their perspectives, but he seemed genuinely surprised when he saw his behavior in the video clips. The training situation ended with a written sentence, which Adam himself composed: "I'm going to concentrate and work quietly, but I can talk about what I am doing right now," to disseminate to interested adults in his environment. The written sentence was an important tool for him as a reminder of how he could transfer learning from this situation to other future situations. Observations afterward have shown that the written sentence is a more powerful tool for him in coping with work situations than are verbal instructions.

This changed not only the way Adam experienced his teachers and other students, but also the way the teachers experienced his behavior. Before seeing the video, the teachers thought Adam was extremely repetitive and that he talked aloud all the time. During the recording, the staff was responsible for ensuring all the students' lunches were prepared on time and the kitchen was left ready for a new group afterward. The staff would also ensure that all three students worked with the right equipment and measured out the correct amounts of the correct ingredients. It was in many ways a stressful situation for the staff and probably why they did not have as much tolerance toward him as was required. When the film was observed in a nonstressful situation, to select a sequence showing the student's lack of communication and interaction and problems it caused, the observers

were certain that there would be many sequences to choose from. Surprisingly, however, Adam tended to work well and do what he was supposed to, although he did talk loudly and constantly. Interestingly, he usually talked about what he was doing. He was motivated during the class in which he made his lunch. Not until he came to class in the kitchen after lunch to do cleaning did he begin to talk about other things; when he talked about topics other than the task at hand, then he lost control of his movements and could not wash dishes anymore.

Case B—Bill

The second case was designed based on the findings of the first case, and the results that Adam and his teachers' views were changed by the videos were seen as important to follow-up. Case B, Bill, was more structured than the first, by defining three different situations to be filmed for 20 min each, before and after the intervention. Bill was also loud, and the study aimed to decrease his noise-making and teach the student to control this behavior in the structured situation. The first filmed sequence was of domestic science lesson in a large group (B1); the second was a structured theoretical situation in the classroom (B2), working as usual in a small group; and the third situation was a non-structured situation, at recess outside with other students (B3). The structured situation (B1) was targeted, and from this one clip each with desired and undesired behavior was chosen, for a total of 2 min of videotape. After this, an analysis was made of all the 20-min films and his desired and undesired behaviors were counted to see whether they increased or decreased after the intervention, and whether there were any differences in his behavior attributable to the different situations. The first film began with Bill at rest. He started to work very well, moving as he liked, and there were no demands on him. The observation situation, with a person following him with a camera, seemed a bit embarrassing for the student, and staff confirmed that the student's behavior was unnatural and not representative of him during the second break situation when the camera and cameraman were present. The analysis shows that Bill's behavior deteriorated from 3 to 7, to 10 deviations from pre-intervention to post intervention, to 6-month follow-up when he was filmed during this situation. When he was in the classroom with his regular classmates, the unwanted behavior decreased after the learning situation from eight incidents to none. However, at the follow-up after 6 months three incidents were noted, but as he was going to change schools in a few weeks he was likely at a higher level of stress at the follow-up. In the structured practical situation, the student, even though he was in a group of students other than his own classmates, and although he had different assistants on each film, greatly enhanced his performance from 37 deviations to 6 after the learning situation and only 3 at the follow-up 6 months later (Table 1).

Table 1. Deviations in Making Loud Sounds for Respondent B.

Deviations during the 20-min videotapes	Unstructured break (recess)	Structured instruction situation (classroom)	Practical instruction situation (kitchen)
Before the intervention	3	8	37
After the intervention	7	0	6
Six months after the intervention	10	3	3

Discussion

The aim of this study was to compare in what ways two different cases to the use of self-monitoring videotapes for developing social skills in adolescents with ASD facilitates their social behavior studied at a micro-level approach (Lavrakas, 2008). The point of departure was variation theory (Marton & Booth, 1997). Based on the conjectures of the theoretical framework, the desired behavior was made discernible by contrasting the undesired and the desired behavior to see the difference at the same time by the use of varying the way the respondents did behave. The situation and person (the respondent) were the same (invariant). The video sequences from different times but showing the same kind of situations, but showing the students behaving in different ways. Before Adam and Bill saw themselves on the film, they were not expressly aware of their own behavior. By that, it was difficult to understand what the teachers wanted them to change as the thought they did behave more or less as they were told to. When they were shown the wanted and unwanted behaviors, it seemed to clarify things they had already been asked to do or not to do several times during their school years. Previous studies of VM have shown positive results in students' behavior, as they copy and adopt the modeled behavior in the video. In this case, both students thought they were already acting in the desired way, and did not understand what they were being asked to change. The question in these two case studies was how to make them aware of their actual behavior and learn to change it. The design in this study was based on variation theory, and aspects of the different behaviors were made discernible by the use of contrast. The teachers used an edited film of different behaviors to make Adam and Bill aware of the difference between unwanted and wanted behaviors. When the students were shown exemplary behavior immediately followed by a contrasting film with the unwanted behavior, they could see the clear contrast and assimilate the knowledge of how to behave in different situations.

There seems to be a kind of transfer in this kind of learning, as found in other studies that have shown how students could later relate to the films and correct their own behavior (Greatz et al., 2006). Transfer has also been found in studies based on variation theory, called generative learning (Holmqvist, Gustavsson, & Wernberg, 2007). The analysis of the films shows that Adam became aware of the learning situation and surprised when he saw his deviance in an edited

film. He was positive and happy, however, when he next saw the film with the desired behavior of his working an exemplary way. The contrast was clear and helped the student to see the difference. In Case B, Bill was helped by the learning situation for at least 6 months, reducing his deviant behavior from 37 to 3 in the kitchen (practical instruction) and from 8 to 3 in the classroom, and could also generalize that learning to other school situations.

In conclusion, Adam and Bill could clearly see the contrast in their behavior when shown the clips of themselves in direct succession. They seem to have increased awareness, become more conscious, and been able to assimilate this new knowledge of themselves and to change their behavior for the better in theoretical and practical structured situations. Bill's behavior in the unstructured break situation showed that he viewed being followed by a cameraman as an abnormal and uncomfortable situation. This was not very surprising, because Bill was usually free of demands during recess and able to behave as he liked, while being filmed made him self-conscious and disturbed his natural way of acting. In the structured situations, he was used to having demands and being observed, and the teachers found him to behave as usual during filming of these parts. The method of social review in a design using clips of desired and undesired behavior improved the students' awareness of their behavior and their willingness and ability to change it.

The limitations and shortcomings of this study is the small number of students; however, in this case, the aim was to follow Adam and Bill during a long period of time and with a micro-level approach. Moreover, we had no controls, which would seem impossible, as people with this diagnosis are all very different. Even if it seems that the contrast in behaviors shown by the two different clips allows the students to achieve the insight and new knowledge that allows them to change their behavior, the results have to be followed-up in future research with other respondents in different ages and with other symptoms. The method of filming with a video camera and editing the film on the computer, however, was difficult and would not be possible for all teachers to accomplish. It required technical equipment, all the different components of which had to be compatible with each other, as well as special editing software to be installed on the computers. If it could be made more user-friendly to teachers and other personal, this method could be used in several situations where changed behavior is required, from school to forensic psychiatric care.

The conclusion is that using the method and base it on a theory on learning (variation theory) also provides an opportunity for exchange between the students and teachers, which may (based on their spontaneous remarks) increase the teachers' understanding of the students. However, this also needs to be studied further, as such a claim cannot be made by this limited study. Even if it is time-consuming to edit the film on the computer, the results in a long-term perspective are worth it as the behavior monitored in high degree is experienced as bothering in the environment. Ayres and Langone (2005) asked how the positive results of using video can be used by the teachers. One powerful direction for future research is to study more cases and based on the results develop some kind of software helping the teachers to create video clips for instructional purposes used to decrease socially obstructive behavior making integration easier in the future as people with ASD could easier understand what we mean in a concrete way that complement the verbal instructions. Building bridges between our different understandings of the same situation might facilitate the integration in society.

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References

- Adler, B., & Adler, H. (2006). *Neuropedagogik – om komplicerat lärande* [Neuropedagogy—On complicated learning]. Lund, Sweden: Studentlitteratur.
- Ayres, K. M., & Langone, J. (2005). Evaluation of software for functional skills instruction blending best practice with technology. *Technology in Action, 1*(5), 1-8.
- Banda, D. R., Matuszny, R. M., & Turkan, S. (2007). Video modeling strategies to enhance appropriate behaviors in children with autism spectrum disorders. *Teaching Exceptional Children, 39*(6), 47-52.
- Bellini, S., & Akullian, J. (2007). A meta-analysis of video modeling and video self-modeling interventions for children and adolescents with autism spectrum disorders. *Exceptional Children, 73*, 264-287.
- Delano, M. (2007). Video modeling interventions for individuals with autism. *Remedial and Special Education, 28*, 33-42.
- Dratsch, T., Schwartz, C., Yanev, K., Shilbach, L., Vogeley, K., & Bente, G. (2013). Getting a grip on social gaze: Control over others' gaze helps detection in high-functioning autism. *Journal of Autism and Developmental Disorders, 43*, 286-300. doi:10.1007/s10803-012-1569-x
- Frith, U. (2000). *Autism och Aspergers syndrom* [Autism and Asperger's syndrome]. Stockholm, Sweden: Liber.
- Gray, C. (1995). Teaching children with autism to "read" social situations. In K. A. Quill (Ed.), *Teaching children with autism: Strategies to enhance communication and socialization* (pp. 219-242). New York, NY: Delmar.
- Greatz, J. E., Mastropieri, M. A., & Scruggs, T. E. (2006). Show time: Using video self-modeling to decrease inappropriate behavior. *Teaching Exceptional Children, 38*(5), 43-48.
- Gustavsson, L. (2008). *Becoming a better teacher: Ways of dealing with the content made a topic of conversation among teachers* (Doctoral dissertation). University of Umeå, Umeå, Sweden.
- Hitchcock, C. H., Dowrick, P. W., & Prater, M. A. (2003). Video self-modeling intervention in school-based settings. *Remedial and Special Education, 24*, 36-45.
- Holmqvist, M. (1995). *Autism. Uppfostran, undervisning och förståelse för personer med extremt atomistisk omvärldsuppfattning* [Autism. Bringing up, educating and understanding persons with an extremely atomistic world view]. Pedagogiska institutionen, Lunds Universitet, Lund, Sweden.
- Holmqvist, M. (2009). Structured flexibility: Six studies of how children with diagnosed autism develop independency in daily living activities. *Scandinavian Journal of Disability Research, 11*, 175-193.
- Holmqvist, M. (2011). Teachers' learning in a learning study. *Instructional Science, 39*, 497-511. Retrieved from <http://www.springerlink.com/content/rr3n5111t0678467/fulltext.pdf>
- Holmqvist, M., Gustavsson, L., & Wernberg, A. (2007). Generative learning: Learning beyond the learning situation. *Educational Action Research, 15*, 181-208.
- Holmqvist, M., Gustavsson, L., & Wernberg, A. (2008). Variation theory—An organizing principle to guide design research in education. In A. E. Kelly, R. Lesh, & J. Baek (Eds.), *Handbook of design research methods in education* (pp. 111-130). New York, NY: Routledge.
- Lavrakas, P. (Ed.). (2008). *Encyclopedia of survey research methods*. Thousand Oaks, CA: Sage.
- Lo, M. L. (2012). *Variation theory and the improvement of teaching and learning*. Göteborg, Sweden: Acta Universitatis Gothoburgensis.
- Lo, M. L., & Marton, F. (2012). Towards a science of the art of teaching: Using variation theory as a guiding principle of pedagogical design. *International Journal for Lesson and Learning Studies, 1*, 7-22.
- Marton, F., & Booth, S. (1997). *Learning and awareness*. Mahwah, NJ: Lawrence Erlbaum.
- Marton, F., & Tsui, A. (2004). *Classroom discourse and the space of learning*. Mahwah, NJ: Lawrence Erlbaum.
- McConell, S. R. (2002). Interventions to facilitate social interaction for young children with autism: Review of available research

- and recommendations for educational intervention and future research. *Journal of Autism and Developmental Disorders*, 32, 351-372.
- McCoy, K., & Hermansen, E. (2007). Video modeling for individuals with autism: A review of model types and effects. *Education and Treatment of Children*, 30, 183-213.
- Quill, A. (Ed.). (1995). *Teaching children with autism: Strategies to enhance communication and socialization*. New York, NY: Delmar.
- Shukla-Mehta, S., Miller, T., & Callahan, K. J. (2010). Evaluating the effectiveness of video instruction on social and communication skills training for children with autism spectrum disorders: A review of the literature. *Focus on Autism and Other Developmental Disabilities*, 25, 23-36. doi:10.1177/1088357609352901
- Shulman, C., Guberman, A., Shiling, N., & Bauminger, N. (2012). Moral and social reasoning in autism spectrum disorders. *Journal of Autism and Developmental Disorders*, 42, 1364-1376.

Author Biographies

Mona Holmqvist Olander is an associate professor in education at the University of Gothenburg, Sweden, and a part-time associate professor at Kristianstad University, Sweden. She is currently leading research projects on learning for people both with and without neuropsychiatric diagnosis, and her special theoretical interests in phenomenography and variation theory form the basis of her research.

Helen Burman has a bachelor's degree in special education and is working as a teacher in Swedish special school for students with disabilities.