



# The Role of Verbal Peer Feedback in the Police: A Scoping Review

Olav Dahl<sup>1</sup> · Marie-Louise Damen<sup>1</sup> · Brita Bjørkelo<sup>1</sup> ·  
Camilla Pellegrini Meling<sup>1</sup> · Magnus Rom Jensen<sup>2</sup>

Received: 30 March 2022 / Accepted: 5 December 2022  
© The Author(s) 2023

## Abstract

Police officers, like other professionals, need to develop their competence and skills in correspondence with society. Peer feedback has been proven to significantly affect learning in the educational setting, and colleagues are seen as significant for the learning process in organizations. However, there seems to be little systematic knowledge concerning how verbal peer feedback affects police officers in workplace learning programs, and which elements affect this feedback. This review aims to fill this gap by analyzing 20 studies selected based on Arksey & O'Malley's methodological framework. Findings show that police officers' performance, motivation, and job satisfaction effectively can be improved using verbal peer feedback. It also shows some workplace conditions and factors management and feedback actors should consider when organizing for and conducting feedback. Lastly, it shows that much of the research conducted within the educational sector also is valid for police workplace learning programs. However, further research is needed, especially concerning the relationship between police peers.

**Keywords** Peer feedback · Verbal · Workplace learning · Police · Review

## Introduction

The workplace is an important arena for learning, and colleagues are seen as significant for the learning process (Billett, 2020; Boud, 1998; Sjöberg & Holmgren, 2021). Although police education has been debated and researched over the years, research is still limited (Bartkowiak-Théron, 2019; Norman & Fleming, 2021), something that also seems to apply to the field of police workplace learning

---

✉ Olav Dahl  
olavdahl@hotmail.com

<sup>1</sup> Norwegian Police University College, Oslo, Norway

<sup>2</sup> Norwegian University of Science and Technology (University Library), Trondheim, Norway

(Campbell, 2008; Jones, 2018). Learning in the workplace differs from scholastic learning, workplaces differ from each other (Tynjälä, 2008), and learning in the police differs somewhat from other vocations (McGinley et al., 2020). One of the differences between workplace and scholastic learning comes from the different aims of the activity (Virtanen et al., 2009, p. 3). Another difference lies in the fact that scholastic learning far more often is formal, or planned, rather than unplanned, meaning that learning outcomes in the workplace can be unpredictable (Tynjälä, 2008). This might however not be the case regarding planned workplace learning activities, activities that can be both goal-oriented and instructor-led in an effort to increase employees' knowledge and skills (Holmgren & Sjöberg, 2022; Sjöberg & Holmgren, 2021). Different workplace conditions such as the organizing of the work also affect learning. Tynjälä (2008) argues that extreme work organizing, meaning strict job descriptions and repetitive tasks, hinder learning, while a more lenient organization will pave the way for learning opportunities. On top of this, the police profession differ from other professions in several manners, like the possibility for having to work under extreme stress (Di Nota & Huhta, 2019) or having to coerce and restrict people (Wood, 2020), to mention a few. As a result, police workplace learning programs is a relevant field of research.

From the longstanding research tradition in the educational field, we know that one of the strongest influences on learning in educational settings is formative assessment and feedback (Carless & Boud, 2018; Hattie, 2009; Havnes et al., 2012). The way feedback is understood has changed in the last decade (Dawson et al., 2019), from being defined as information that learners use to fill a gap (Ramaprasad, 1983), to being described and defined using words such as 'dialogue' and 'process' (Zhu & Carless, 2018), 'balance of power' (Steen-Utheim & Wittek, 2017), 'interaction' (Mercader et al., 2020), 'co-construction' (Steen-Utheim, 2019), and 'learning-oriented view' (Molloy et al., 2019). In general, feedback can affect a person's performance positively and negatively regardless of the sender's good-natured intent (Kluger & DeNisi, 1996). It has also been shown to affect motivation (Kluger & Van Dijk, 2010), satisfaction (Geister et al., 2006; O'Reilly III & Anderson, 1980), and self-regulation (McClelland et al., 2018; Monteiro et al., 2019). 'Peer feedback', which is our topic of interest, refers to feedback given and received between learners of a similar status.

Despite its traditional learning culture (meaning primarily lecture-based teaching based on behavioristic methodology) (McGinley et al., 2020), peer feedback is presumed to play a pivotal role in workplace learning in the police. But there seems to be little systematic knowledge pertaining to how feedback works in this context, i.e. in workplace learning programs. Therefore, through a scoping review, we explore research literature concerning verbal peer feedback in police workplace learning programs. In detail, we are interested in gaining more knowledge about which elements influence verbal peer feedback in police officers' workplace learning as it is organized within formal programs. In this review, 'programs' refers to planned situations where "... real and practical organisational issues..." (Miller, 2003, p. 21) are the basis for employees' learning. It can be organized over a short time (e.g. a temporary mentorship) or as a career-long affair. In addition, we are interested in the individual outcomes of peer feedback for police officers. However, before we present

the review, an overview of factors that have been found to influence peer feedback in general, is presented. This overview refers research from the educational field and to some extent the field of workplace learning. The police field is not represented, as this is what this article aims to review. However, it is a hope that the literature from the educational and workplace learning field is representative, wholly or partially, for the police workplace learning field.

## Factors Influencing Peer Feedback

In reviews of the feedback literature, several common factors influencing the effectiveness, the uptake, and the impact of feedback are described: timing, valence, frequency, characteristics of source and recipient, specificity, and supportiveness (Haughney et al., 2020; Ilgen et al., 1979; Shute, 2008). All authors problematize their findings and clarify that the literature they reviewed is inconsistent or divergent in several of the factors and that some factors are weakly researched.

### Timing

‘Timing’ is described by all reviews, although the results differ. Haughney et al. (2020) conclude that most researchers agree that feedback should be given quite close to the performance and that both teachers and students agree on this. But how close is “quite close”? In a recent study, Corral et al. (2021) found evidence to support that delayed feedback can be advantageous. However, ‘delayed’ is seen as minutes after an answer is given, as opposed to ‘immediate’, meaning milliseconds after the answer is given. It seems that the definition of immediate and delayed is important, along with the type of feedback that is researched.

### Content and form/mode

Feedback uptake is affected by the content of the feedback, both by what is said and by how it is said (Haughney et al., 2020). Butler et al. (2013) claim that content is the most important aspect in any feedback situation since this is what allows learners to correct errors and maintain wanted performance. Jonsson (2013) supports its importance but also argues that a too authoritative tone discourages feedback uptake. Haughney et al. (2020) and Ilgen et al. (1979) agree that feedback with a positive valence is preferred over feedback with a negative valence, and Van der Kleij and Lipnevich (2021) write that a judgmental tone might elicit anxiety in the receiver, hindering feedback uptake. Constructive criticism can be used in some cases, but judgmental feedback, such as grades or performance reviews, might discourage a learner (Haughney et al., 2020; Lefroy et al., 2015; Rivera et al., 2021). One explanation for this is that grades affect emotions and emotions affect learning (Carless & Boud, 2018; Värlander, 2008). However, it can be hard to predict what constitutes positive and negative feedback, as this is interpreted by the individual in the specific situation (Higgins et al., 2001; Kluger & Van Dijk, 2010).

## Frequency

Ilgen et al. (1979) conclude that, in general, feedback cannot be given too frequently. This factor has been researched a great deal and in different settings, producing findings that both support and challenge Ilgen's conclusions. Lam et al., (2011, p. 217), for example, state that "... frequent feedback can overwhelm an individual's cognitive resource capacity, thus reducing task effort and producing an inverted-U relationship with learning and performance over time". Wulf et al., (1998, p. 180) on the other hand, argue that "... high feedback frequencies are beneficial for the learning of complex motor skills, at least until a certain level of expertise is achieved". Since the research has been conducted in different areas on different skills, generalization to our field challenging. However, regarding the field of workplace learning, the latest research seems to show that there is indeed no maximum (Mertens et al., 2021).

## Relationship

The literature shows that the relationship between the people involved is detrimental to the uptake and utilization of feedback and that a negative relationship can lead to no or a negative reaction to feedback (Ajjawi & Boud, 2017; Mertens et al., 2021; Price et al., 2010; Telio et al., 2015). Ilgen et al. (1979) argue that relational closeness increases feedback uptake, but also state that more research is needed. Steen-Utheim and Hopfenbeck (2019), Henderson et al. (2019), and Zhou et al. (2021) all confirm this and state that credibility, as well as trust and respect between the actors, are vital. Haughney et al. (2020) point out that there are differing results regarding whether feedback from peers or experts is most effective. There are some indications that peer feedback should be used in coalition with feedback from an expert/a supervisor (Evans, 2013; Tai et al., 2016). However, this research mainly stems from the educational field, legitimizing questions about its application in the field of workplace learning. Ranney et al. (2018) hypothesize that peer feedback seems less threatening than supervisor feedback since supervisors can evaluate and discipline employees. This is supported by Rivera et al. (2021), who claim that this particularly applies to negative feedback. However, Rivera et al. (2021) also show that research on the balance of power is still inconsistent and insufficient. Although not discussed by the three reviews, it should be mentioned that peers tend to align their feedback over time, something that might lead to censorship and generally lower quality feedback (Bürgermeister et al., 2021). This should be considered in a workplace, especially if the employees seldom change jobs.

## Specificity and level of support

Shute (2008) and Haughney et al. (2020) describe specificity as the 'level of information' the feedback holds, and as the opposite of vague. Unspecific feedback can be perceived as useless and create frustration (Shute, 2008). Specificity has been researched by many, and there is a clear agreement that learners prefer specific feedback (e.g. Berndt et al., 2018; Bevan et al., 2008; Hepplestone & Chikwa, 2014; Kelly, 2018; Straub, 1997; Strijbos et al., 2010; Zacharias, 2007), but that individual

differences affect how specificity is perceived (Hargreaves, 2013; Straub, 1997; Strijbos et al., 2010).

Shute (2008) describes how feedback can go from directive (telling learners what to do) to facilitative (more suggestive) as the learner progresses, and labels this 'supportive feedback'. Haughney et al. (2020) call this 'understandable and actionable', meaning that feedback should not be vague but rather meaningful, should have an impact on future work, and should occur frequently enough for the learner to have a chance in making use of the feedback.

Form/mode refers to whether the feedback is delivered in written, oral, video, automated, or other formats. Despite little systematic evidence of the superior effectiveness of one mode over the other (Van der Kleij & Lipnevich, 2021), Hepplestone and Chikwa (2014) found that students prefer written over oral feedback, opposed to Steen-Utheim and Hopfenbeck (2019) who found that students wish instead oral over written feedback. Haughney et al. (2020) state that combining several modes may have the best outcome.

### Individual traits

Both Ilgen et al. (1979) and Shute (2008) state that individual traits of the receiver affect feedback. Ilgen et al. (1979) state that people with an internal locus of control will outperform people with an external locus of control when feedback only comes from the task or oneself. On the other hand, if external feedback is available (e.g. from colleagues or supervisors), people with an external locus of control will outperform people with an internal locus of control. Shute (2008) argues that people are more likely to attribute their success to effort, not to ability, if the feedback is self-referenced. This means that a person's performance is compared with earlier performances, not with other peoples' performances.

In sum, peer feedback factors influential for learning refer to the actors involved, the situation, and the characteristics of the feedback. As much of this research has been carried out in the educational field, we are interested in what is written in the research literature about the effects of verbal peer feedback and which effects it produces, in the setting of police workplace learning programs. To find out, we conducted a scoping review study, the process of which will be presented in the following.

### Method

This study aims to map the existing literature on verbal peer feedback in police workplace learning programs. To examine this, we conducted a scoping review, based on the framework of Arksey and O'Malley (2005). They divide the process of reviewing into five stages: 1) identifying the research question, 2) identifying relevant studies, 3) selecting the studies, 4) charting the data, and 5) collating, summarizing and reporting the results (Arksey & O'Malley, 2005, p. 24).

## Searching and Identifying Relevant Studies

Based on the choice of search terms selected by all authors, the two librarians (MRJ and CPM) performed the database searches. The search was conducted in the following databases: Scopus, Academic Search Premier, ERIC, Criminal Justice Abstracts, International Security and Counter-Terrorism Reference Center, and Sociology Source Ultimate (see Additional file 1 for full search strings).

## Inclusion and Exclusion Criteria

This scoping review focuses on the police and closely related occupations and how officers give and receive verbal peer feedback in workplace learning programs. Studies containing information on other vocations are only included if they also contain information on our included vocations. However, results regarding other vocations are not analyzed. Further, we are less interested in on-the-job training that does not include feedback, and less interested in feedback where the power balance is unequal, such as between manager and employee. We also excluded student populations and educational settings, since we wish to focus on workplace learning. In addition to the term ‘feedback’, terms such as ‘mentoring’ and ‘supervision’ are included. Written feedback was excluded, as it differs from verbal feedback in many ways (McGrath et al., 2011). We have no restrictions on publication year which allowed for detecting development over time. The searches were limited to English-language publications. All inclusion and exclusion criteria are presented in Table 1. It should be added that, based on face validity, some of the included studies might appear to concern other areas than the intended areas, or they might even seem not to pertain to feedback at all. However, all included studies provide information on verbal peer feedback among police officers in a formal workplace setting.

**Table 1** Inclusion and Exclusion Criteria Adapted from SPIDER (Cooke et al., 2012)

Inclusion	Exclusion
<p><b>Sample:</b> Police officer, police investigator, law enforcement, detective</p> <p>Secondary vocation: medicine, nursing, paramedic, medic, emergency medical technician (EMT), firefighter, fireman, armed forces, soldier, security guard, prison guard</p> <p><b>Phenomenon of interest:</b> Verbal peer feedback in the police</p> <p><b>Design:</b> Any design</p> <p><b>Evaluation:</b> Feedback between equals/close to equals, verbal, in the workplace</p> <p><b>Research Type:</b> Qualitative, quantitative, and mixed methods studies</p>	<p>Not police, medicine and health, firefighting, defense, security, prison</p> <p>Feedback from teacher to student, student to teacher, professional to the public, public to professional, superior to employee(s), employee to superior, self-generated</p> <p>Written, non-verbal, computer-generated, automated</p>

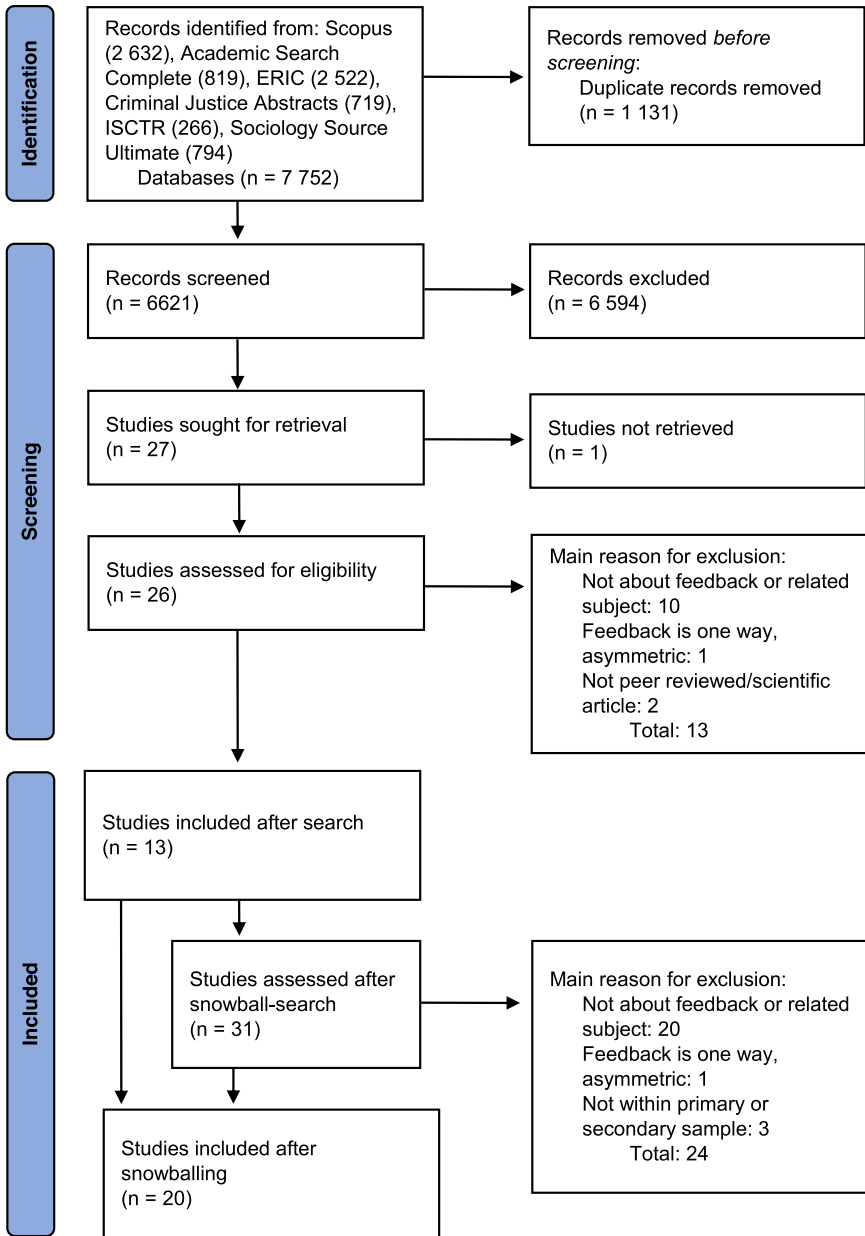


Fig. 1 Summary of Literature Search, Adapted from PRISMA (Page et al., 2021)

### Duplicate Removing and Screening

Once the search was completed, references were downloaded to EndNote, and duplicates were removed (MRJ and CPM; see Fig. 1). The dataset was uploaded to

Rayyan and divided into three and each part was independently screened by three of the authors (OD, MRJ, and CPM). The final inclusion of references was determined by two of the authors (OD and MLD). During this process, it was decided that articles about peer support and mental support would be excluded, as the reading of abstracts and some studies showed that this pertained more to Posttraumatic Stress Disorder and therefore was outside of the scope of the review. This left 13 studies that sufficiently matched the inclusion criteria. These were all read by the first author, and a snowball search was performed as this often presents new and important sources (Greenhalgh & Peacock, 2005). This yielded 31 new studies, which were assessed (OD and MLD), 24 of these were excluded as they were not within the scope of this review, leaving 20 included studies in total. The seven new additions were read (OD). Although some of the studies did not fit the inclusion criteria, they demonstrated relevance in regards to illuminating the aim of the study and were included in the further analyses. Examples include non-peer relations between feedback actors, occupational descriptions including comparative studies of police officers and other professionals (i.e. teachers, financial employees, nurses, social workers,) as well as studies of relevance conducted among private investigators, child protective agents, mental health workers, and airport police.

## Data Collection

All included studies were subject to data collection through a registration scheme. The registration scheme (see Additional file 2) consisted of variables suggested by Page et al., (2021), variables derived from the goal of the study, variables based on earlier read literature, and suggested variables about metadata (Duval, 2001). The registrations were plotted into an Excel sheet to provide an overview. During this process, it became apparent that some variables should be altered, removed, or added. This led to some new variables and a new round of extracting data. Of the 20 included studies (see Table 2), the time of publication ranged from 1982 to 2018, and all but one were published as peer-reviewed articles ( $n=19$ ).

The studies were published in journals within the fields of human resources (6), psychology (4), child protection (1), law enforcement (4), security (2), criminology (2), and education (1), and originated from a wide variety of continents (Europe; Turkey, 3, The Netherlands, 3, Belgium, 3, Sweden, 1, and Israel, 1, North-America; the USA, Canada, 1, Africa; South-Africa, 1, and Australia, 2). This metadata will not be analyzed further. Lastly, information regarding research design and method of data collection was collected in an attempt to identify possible prevalent uses of methods, or perhaps gaps in methodological approaches. As Table 2 shows, (quantitative) surveys and interviews seem to be the two most used methods for data collection, but due to the low number of studies, and due to the lack of information in several studies, no valid conclusions can be drawn.



**Table 2** List of Included Studies

Authors	Year	Title	Journal	Country of data collection	Research design Method of data collection
Demirkol, I. C., & Nalla, M. K	2017	Sustaining police officers' motivation in aviation security	<i>Journal of Transportation Security</i>	Turkey	Quantitative Survey
Demirkol, I. C., & Nalla, M. k	2018a	Enhancing Motivation and Job Satisfaction of Police Officers: A Test of High Performance Cycle Theory	<i>Criminal Justice &amp; Behavior</i>	Turkey	Quantitative Cross sectional survey
Demirkol, I. C., & Nalla, M. K	2018b	Predicting job satisfaction and motivation of aviation security personnel: a test of job characteristics theory	<i>Security Journal</i>	Turkey	Quantitative Cross sectional survey
Doorbos, A. J., Bolhuis, S., & Denessen, E	2004	Exploring the Relation between Work Domains and Work-Related Learning: The Case of the Dutch Police Force	<i>International Journal of Training and Development</i>	The Netherlands	Exploratory mixed methods (unclear) Observation and semi-structured interviews
Doorbos, A. J., Simons, R. J., & Denessen, E	2008	Relations between characteristics of workplace practices and types of informal work-related learning: A survey study among Dutch Police	<i>Human Resource Development Quarterly</i>	The Netherlands	NA Survey
Fagan, M. M	1988	Formal vs. Informal Mentoring in Law Enforcement	<i>Career Planning and Adult Development Journal</i>	USA	Experimental, comparative Surveys
Fagan, M. M., & Ayers, K	1985	Professors of the Street—Police Mentors	<i>FBI Law Enforcement Bulletin</i>	USA	NA Survey
Fagan, M. M., & Walter, G	1982	Mentoring among Teachers	<i>Journal of Educational Research</i>	USA	Quantitative (unclear) Survey

Table 2 (continued)

Authors	Year	Title	Journal	Country of data collection	Research design Method of data collection
Janssens, L., Smet, K., Ongheena, P., & Kyndt, E	2017	The relationship between learning conditions in the workplace and informal learning outcomes: a study among police inspectors	<i>International Journal of Training and Development</i>	Belgium	Mixed methods: Sequential exploratory design Interviews and surveys
Koopmans, H., Doombos, A. J., & van Eekelen, I. M	2006	Learning in Interactive Work Situations: It Takes Two to Tango; Why Not Invite Both Partners to Dance?	<i>Human Resource Development Quarterly</i>	The Netherlands	Multiple case design Interviews
Lamb, M., Sternberg, K. J., Orbach, Y., Hershkowitz, I., Horowitz, D. & Esplin, P. W	2002a	The Effects of Intensive Training and Ongoing Supervision on the Quality of Investigative Interviews With Alleged Sex Abuse Victims	<i>Applied Developmental Science</i>	Israel	Experiment with baseline (unclear) Examination of transcribed interviews
Lamb, M., Sternberg, K., Orbach, Y., Esplin, P. & Mitchell, S	2002b	Is Ongoing Feedback Necessary to Maintain The Quality of Investigative Interviews With Allegedly Abused Children?	<i>Applied Developmental Science</i>	USA	NA Examination of transcribed interviews
Lundin, J., & Nulden, U	2007	Talking about Tools—Investigating Learning at Work in Police Practice	<i>Journal of Workplace Learning</i>	Sweden	Ethnographic field study Observations and interviews
Mofokeng, J. T	2012	Perspectives on supervision and mentorship within the south african police detective service	<i>Acta Criminologica</i>	South Africa	Qualitative (non-experimental) Literature review and questionnaire survey

Table 2 (continued)

Authors	Year	Title	Journal	Country of data collection	Research design Method of data collection
Powell, M. B., Fisher, R. P. & Hughes-Scholes, C. H	2008	The effect of intra-versus post-simulated practice interviews about child abuse	<i>Child Abuse &amp; Neglect</i>	Australia	Experiment Survey and assessment/measurement
Powell, M. B., Wright, R. & Clark, S	2010	Improving the competency of police officers in conducting investigative interviews with children	<i>Police practice and research: an international journal</i>	Australia	NA Review of literature
Price, H. L. & Roberts, K. P	2011	The effects of an intensive training and feedback program on police and social workers' investigative interviews of children	<i>Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement</i>	Canada	Experiment (unclear) Transcription, coding and comparison of interviews
Smets, L. & Pauwels, C	2010	The feasibility and practicability of police training—Investigative interviewers' perceptions towards coaching	<i>Policing: An International Journal of Police Strategies &amp; Management</i>	Belgium	Experiment Evaluation questionnaire
Smets, L., & Rispens, I	2014	Investigative interviewing and training: The investigative interviewer apprentice. (Book chapter)	<i>None (book chapter)</i>	Belgium	NA NA
Warren, A. R., Woodall, C. E., Thomas, M., Nunno, M., Keeney, J. M., Larson, S. M. & Stadfeld, J. A	1999	Assessing the effectiveness of a training program for interviewing child witnesses	<i>Applied Developmental Science</i>	USA	NA Surveys and transcript scoring

## Generalization

As this review shows, there is little specific research on verbal peer feedback in workplace learning programs in the police. This means that any generalizations made from our review should be considered with this in mind. After all, verbal peer feedback is often influenced by the context in which it is given/received (Haughney et al., 2020; Shute, 2008), making generalizations quite difficult, especially due to the relatively low number of papers that made the inclusion criteria. However, the intentions of this review is not to make absolute generalizations. Rather, more naturalistic generalizations, i.e. generalizations based on similarity (Johnson & Christensen, 2020, p. 289) is of more interest.

## Results

This study examined what the research literature tells about verbal peer feedback in police workplace learning programs. The main result shows that peer feedback can be used to improve individual performance, motivation, and job satisfaction among police officers in workplace learning programs. Secondly, conditions

**Table 3** Categorization of Studies

	Outcomes of feedback	Workplace conditions affecting feedback	Factors influencing the uptake or utilization of feedback
Demirkol and Nalla (2017)	X		
Demirkol and Nalla (2018a)	X	X	
Demirkol and Nalla (2018b)	X		
Doornbos et al., (2004)		X	
Doornbos et al., (2008)		X	X
Fagan (1988)	X	X	
Fagan and Ayers (1985)	X		
Fagan and Walter (1982)	X		
Janssens et al., (2017)	X		
Koopmans et al., (2006)		X	X
Lamb et al., (2002)		X	
Lamb et al., (2002)	X	X	
Lundin and Nulden (2007)	X		
Mofokeng (2012)	X	X	
Powell et al., (2008)			X
Powell et al., (2010)		X	
Price and Roberts (2011)	X		
Smets and Pauwels (2010)	X	X	
Smets and Rispens (2014)	X		X
Warren et al., (1999)		X	

and factors, such as routines and time, impact peer feedback in police workplace learning programs. In sum, these results indicate that verbal peer feedback is an effective way to improve police practice. In the following, we present a categorization of overarching themes and subsequently discuss how the main results may be understood and explained.

## Overarching themes

During the analysis, three overarching themes emerged that summarize the main focus of the included studies. All studies fall into one or more of the overarching themes; 1) outcomes of feedback, 2) workplace conditions affecting feedback, and 3) factors influencing the uptake or utilization of feedback. In Table 3 we show an overview of how the studies are distributed. In the following, we will present the findings concerning each of the three themes.

### Outcomes of Feedback

There are 13 studies that discuss outcomes of verbal peer feedback in workplace learning programs, i.e. the individual or organizational effects that may come from giving or receiving feedback. Overall, the studies describe positive outcomes for individual performance, motivation, job satisfaction, and the workplace as a whole. None of the studies present negative effects of feedback, but Lamb et al., (2002) question the necessity of feedback alone and assert that the time spent on the process compared to the results is not worth the cost. Nonetheless, they report positive findings concerning individual performance, arguing that training and feedback can increase investigative interview quality. Studies by Smets and Pauwels (2010), Smets and Rispens (2014), and Mofokeng (2012) also found general positive outcomes for individual interviewing performance, but they did not elaborate on potential explanations as to how and why this effect occurs. Price and Roberts (2011), however, specify that feedback leads to an increase in the information that investigative interviewers manage to elicit from those who are interviewed, and that receiving feedback more than doubles the use of prompts in investigative interviews.

Another outcome of feedback, motivation, was reported in three different studies conducted by Demirkol and Nalla (2017, 2018a, 2018b), and a study by Mofokeng (2012). Mofokeng does not elaborate on potential explanations as to how and why the effect occurs. According to Demirkol and Nalla, feedback affects police officers' motivation by allowing an officer to compare their level of performance with a standard. This possibility of comparison allows the officers to set goals for further improvement, which again affects the officers' wishes for new feedback. In other words, feedback is effective if goal setting occurs, and goal setting is effective as long as feedback is provided (Demirkol & Nalla, 2017).

Change in job satisfaction is also found to be an outcome of feedback. According to Fagan and Walter (1982), Fagan and Ayers (1985), and Fagan (1988), the

relationship between new officers ('rookies') and their field training officers is the mediating factor for the impact feedback can have on job satisfaction. Demirkol and Nalla (2018a), and Demirkol and Nalla (2018b) found the same results, and explain that feedback has a direct effect on job satisfaction, and an indirect but distinct effect on job satisfaction through motivation (i.e. motivation is a mediation variable). They tie these effects to emotional responses and the perception of the works challenging and fulfilling nature (Demirkol & Nalla, 2018b).

Janssens et al., (2017) conclude that also the organizational level might benefit from feedback between individuals, at least when combined with other learning conditions such as information and reflection. It is not specified what this organizational learning entails. Lundin and Nulden (2007), however, explain that feedback can increase police officers' collective ability to reflect. This occurs by giving and receiving feedback between partners, both on their reflections and their use of police tools. Lundin and Nulden (2007) conclude that the officers themselves perceive this type of talk as vital to the development of their community of police practice.

## Workplace Learning Conditions

The second overarching theme, workplace conditions affecting feedback, comprises all aspects that are under the direct influence of the workplace and its management, such as office space, economy, rules and routines, equipment, time management, and even culture. 11 studies present findings concerning learning conditions that affect police officers in their feedback practice in the workplace. A common feature among the majority of the studies is that the authors encourage management to actively adapt the workplace to provide police officers with an (increased) opportunity to engage in (peer) feedback. Contrasting views are found in only two of the studies. Koopmans et al., (2006) agree that interactions in the workplace are important for police officers learning, but emphasize that only 5% of police officers report that verbal peer feedback contributes to learning. Lamb et al., (2002) also agree that feedback improves interview quality, but found that it only gave marginal improvement when added to an existing program of intensive interview training and monthly day-long seminars.

Some of the studies that recommend adapting the workplace conditions to enhance the outcome of verbal peer feedback lack descriptions of how and why this is suggested. They merely state that a 'powerful', 'inviting' or 'formal' learning environment should be created (Doornbos et al., 2004, 2008; Mofokeng, 2012), or that 'effective' feedback should be given to police officers within their workplace. Other studies recommending similar adaptations also present information on the frequency of feedback. Warren et al., (1999), Lamb et al., (2002), and Demirkol and Nalla (2018a) respectively call for 'regular', 'ongoing', and 'timely' feedback on police officers' performance, but neither elaborate on this. Smets and Pauwels (2010) are more specific and recommend monthly feedback sessions.

Some of the studies recommend that (verbal peer) feedback should not be the only activity for police management to facilitate. Warren et al., (1999) found that a training program where participants can engage in practice followed by immediate feedback would be the most effective way to learn complex skills. They also found that neither training nor feedback alone is sufficient when trying to translate knowledge into practice for child interviewers. Powell et al., (2010) builds on this research and argue that feedback should be coupled with ‘mock’ interviews instead of real interviews. Smets and Pauwels (2010) present findings showing that a combination of role-playing, personal experiences, self-reflection, evaluation, and feedback (from peers and a coach) aid individuals in developing interpersonal interview competence while at work.

Lastly, Fagan (1988) discusses whether mentoring should be made formal and compulsory for new police officers, or if mentoring relations should be allowed to grow naturally. He concludes that there are very few differences when it comes to the performance of the officers, but at the same time, he is clear that his study offers no conclusive answers due to a small sample.

### Factors Influencing Uptake or Utilization

The third overarching theme, factors that influence the uptake or utilization of feedback, is discussed in four studies. One study examined the timing of feedback and found that intermittently given feedback *during* an investigative interview is more effective than feedback that is given *after* the interview is finished (Powell et al., 2008). The authors do however question their results, as the instructors inadvertently might have influenced the interviewees’ answers during the interview. The actors playing the interviewee had been trained to respond positively to the use of open-ended questions, and the presence of the instructors might have triggered a more positive response.

Two studies present findings regarding the balance of power between the sender and receiver of feedback. Doornbos et al., (2008) found that police officers report that they learn more from peers and that they learn more infrequently from new and less-experienced colleagues. Koopmans et al., (2006) present converse results and add that law enforcement employees seem to differ somewhat from other professions. Most employees report that they mostly learn from peers, while police officers report learning from colleagues with equal, higher, and even lower organizational positions to a greater degree. They explain that this might, partly, stem from the hierarchical nature of the police. Smets and Pauwels (2010) also present views on the balance of power, although not based on empirical data but rather by reviewing other studies. They write that trust and confidence need to be present between the feedback actors, along with the belief that feedback works.

In addition, Smets and Rispen (2014) list ‘rules’ about both giving and receiving feedback. The giver should talk about factual events and consequences, give actionable feedback, be descriptive, speak in the first person, limit the amount of feedback, be constructive, give feedback stepwise, give the recipient space to react, make it

known that the giver means well, and check if the recipient understands the feedback or not (Smets & Rispens, 2014, p. 161). As a receiver, one should actively engage and ask for elaborations and clarifications, see the learning potential of feedback, listen carefully, be enquiring, ask for examples and thank the giver, and be not defensive or quarrelsome (Smets & Rispens, 2014, p. 162).

## Overall Discussion and Implications

### Influencing Factors

In the educational field, factors influencing uptake or utilization have been researched extensively. Only four of the 20 studies included in this review discuss such factors and only two factors are treated; timing and balance of power. In other words, there is a paucity of research on factors that affect the uptake and utilization of feedback in police workplace learning programs.

Regarding timing, Powell et al., (2010) found feedback given intermittently (i.e. during) in an investigative interview was the most efficient when trying to increase desired behavior in the interviewees. They did, however, question their results and suggest that feedback given closely after the performance might be equally efficient. This suggestion corresponds with research within the educational field where researchers agree that feedback should be given close to the performance (Corral et al., 2021; Haughney et al., 2020). However, the researchers differ in their understanding of 'close'. It seems that feedback in both police workplace learning programs and educational settings has the most effect, and is seen as most effective by receivers when received minutes after the performance is completed.

The second factor, the balance of power, is researched quite a lot in educational settings. Research suggests that students find peer feedback useful, and that giving feedback might be even more useful than receiving it, but that it should be combined with expert feedback for reasons of legitimacy (Haughney et al., 2020). This aligns with the more recent definitions and understanding of feedback in that it is a dialogical process where actors should strive for a more equal balance of power (Dawson et al., 2019; Steen-Utheim & Wittek, 2017; Zhou et al., 2021). Within the workplace setting, the balance of power in feedback is less researched, but existing research indicates that peer feedback also here is seen as less threatening than feedback from superiors (Ranney et al., 2018). However, as in educational settings, it is assumed that feedback from superiors is needed as well (Bürgermeister et al., 2021). As for the field of police workplace learning programs, results differ but Doornbos et al., (2008) and Koopmans et al., (2006) agree that officers learn from peer feedback. Koopmans et al., (2006), who did a comparative study between police officers, teachers, and financial service professionals, found that police officers differed from the two other groups in that they were more open to feedback from peers, superiors, and subordinates alike. They use the hierarchical nature of the police as an explanation, stating that police officers are used to receiving information and taking orders. What is not explained is whether the police officers see all colleagues – superiors and subordinates alike – as equal in power, or whether they are used to getting



feedback, regardless of hierarchical level. Neither is it discerned between different forms of power, such as power coming from one's position/rank, a power to influence salary or tasks, or a power stemming from superior knowledge and experience.

### **Workplace Conditions**

Our results indicate that managers should adapt the workplace to allow for (verbal peer) feedback. This is in correspondence with the fields of general workplace learning (Billett, 2020; Boud, 1998; Sjöberg & Holmgren, 2021) and scholastic learning (Zhu & Carless, 2018). Only two of the included studies oppose this, arguing that feedback alone is not worth the cost due to its time-consuming nature (Lamb et al., 2002) and that police officers do not report feedback as a major contributor to learning (Koopmans et al., 2006).

A second recommendation found in the included studies is that other activities beyond (verbal peer) feedback should be used to train officers, such as training programs and mock interviews. This aligns with recent findings that officers need to learn diverse skills and thus need to utilize diverse learning methods (McGinley et al., 2020).

### **Reliance on Educational Research**

Even though research on police workplace learning has been scarce (Campbell, 2008; Norman & Fleming, 2021), our results suggest that practitioners and policy-makers within the police workplace learning field can look to the research adhering to the field of education. The studies categorized under 'outcomes of feedback' show that feedback in police workplace learning programs can be used to affect individual performance, motivation, and job satisfaction, similarly to feedback in educational settings (Kluger & DeNisi, 1996; Kluger & Van Dijk, 2010; O'Reilly III & Anderson, 1980). Overall, this indicates that research findings concerning feedback in educational and general workplace learning settings apply to police workplace learning settings, and perhaps vice versa. If this is the case, the effects of verbal peer feedback in police workplace learning programs on performance, motivation, and satisfaction can be explained as it is in the educational field, i.e. by looking at the emotional component of feedback. Receiving feedback causes emotional responses (Carless & Boud, 2018; Värlander, 2008) triggered and/or moderated by the relation between the actors (Steen-Utheim & Hopfenbeck, 2019; Zhou et al., 2021), attributional factors of the recipient (Kluger & Van Dijk, 2010), the valence of the feedback (Haughney et al., 2020), the degree of supportiveness (Hargreaves, 2013; Shute, 2008), and the recipient's self-regulatory aptitude (Hargreaves, 2013; McClelland et al., 2018). All these factors are potentially present in all feedback processes, regardless of where they take place. This means that a police officer providing verbal feedback to a peer must take emotional responses and their triggers/mediators into account when trying to change performance, motivation, or satisfaction. This is supported by the findings of Demirkol and Nalla (2018a), and Demirkol

and Nalla (2018b) who argue that the effects of feedback may be explained by how motivation and job satisfaction impact emotional responses.

### **Differences and Reservations**

The explanation presented above does not account for situational or conditional factors. If situational conditions and workplace conditions are included, a more nuanced understanding of mediating, moderating, and direct effects might appear. As Tynjälä (2008) points out, there are significant differences between education and workplace learning. The different cultural and social contexts between a workplace and an educational institution is one example. The mere possibility (in space and time) to give/receive feedback, and the formality/informality of the feedback situations is another. The educational system is organized to allow for feedback and it formalizes feedback processes. Workplaces do not seem to do this to the same extent. In addition, workplaces are different, based on things such as profession(s) represented, size, organization etc. Based on the studies included in the literature, it is also uncertain if feedback processes should be formalized (Fagan & Walter, 1982).

Another example is grades, a form of assessment that can have harmful effects on the learners in the educational system (Lefroy et al., 2015), but is absent in workplaces. However, this effect can also be said to be found in workplaces where supervisors “judge” their employees (Ranney et al., 2018; Rivera et al., 2021), eliciting the same emotions that grading produces. This might mean that grading and judgmental behavior has equivalent effects on learners, but more research is needed in this field.

If research findings concerning educational and general workplace learning are valid for feedback processes affecting individual performance, motivation, and job satisfaction in the police, it is relevant to think that other areas in the two mentioned fields also pertain to the workplace of police officers. This includes the positive effect of feedback on self-confidence (Steen-Utheim & Hopfenbeck, 2019), and self-efficacy (Bürgermeister et al., 2021). However, these areas are not mentioned in the studies included in this review. This also applies to self-regulation, which has been researched quite a lot in the educational sector, but seemingly less so in the field of police workplace learning programs.

### **Conclusion and Future Research**

This review has examined what has been written in the research literature about verbal peer feedback in police workplace learning programs. Mainly, it shows that verbal peer feedback is widely used to better individual performance, motivation, and job satisfaction among police officers in workplace learning programs, which corresponds with the educational sector and general workplace learning literature. This study also shows that factors found to have an effect in educational research apply in police workplace learning programs in much the same way.

As for future research, we see that several areas are under-researched, but we particularly wish to acknowledge the importance of future research regarding police

officers' views on and reactions to feedback from peers versus superiors versus subordinates. As previously stated, the field of educational research emphasize the importance of relational factors and balance of power in learning from feedback. It seems that feedback from peers is positive for learning, but that feedback from experts is also needed. The results provided by Koopmans et al., (2006) somewhat counter this, making further research on the significance of the relations between police officers important.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s12186-023-09316-z>.

**Acknowledgements** The authors would like to thank Professor Kari Smith for her valuable contributions in the process of writing this article

**Authors' Contributions** Olav Dahl had the idea for the article and it was refined in cooperation with Marie-Louise Damen, Brita Bjørkelo, and Kari Smith. The literature search and first draft of Methods-section was performed by Camilla Pellegrini Meling and Magnus Rom Jensen. Data analysis was conducted by Olav Dahl and MarieLouise Damen. First draft by Olav Dahl, revised by Marie-Louise Damen and Brita Bjørkelo, with comments from Kari Smith. The author(s) read and approved the final manuscript.

**Funding** Open access funding provided by NTNU Norwegian University of Science and Technology (incl St. Olavs Hospital - Trondheim University Hospital). The work is funded by The Norwegian Police University College and a part of Olav Dahl's PhD project. There are no other relevant financial or non-financial interests directly or indirectly related to this work to disclose.

**Availability of Data and Materials** The data that support the findings of this study are available from the corresponding author upon request.

## Declarations

**Ethics Approval and Consent to Participate** This article followed the ethical rules stipulated for research by The Norwegian National Research Ethics Committees. No approval was required.

**Competing Interests** The authors declare that they have no conflict of interest.

**Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

## References

- Ajjawi, R., & Boud, D. (2017). Researching Feedback Dialogue: An Interactional Analysis Approach. *Assessment & Evaluation in Higher Education*, 42(2), 252–265. <https://doi.org/10.1080/02602938.2015.1102863>

- Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, 8(1), 19–32. <https://doi.org/10.1080/1364557032000119616>
- Bartkowiak-Théron, I. (2019). *Research in Police Education: Current Trends*, 20(3), 220–224. <https://doi.org/10.1080/15614263.2019.1598064>
- Berndt, M., Srijbos, J.-W., & Fischer, F. (2018). Effects of written peer-feedback content and sender's competence on perceptions, performance, and mindful cognitive processing. *European Journal of Psychology of Education*, 33(1), 31–49. <https://doi.org/10.1007/s10212-017-0343-z>
- Bevan, R., Badge, J., Cann, A., Willmott, C., & Scott, J. (2008). Seeing eye-to-eye? Staff and student views on feedback. *Bioscience Education*, 12(1), 1–15. <https://doi.org/10.3108/beej.12.1>
- Billett, S. (2020). *Learning in the Workplace: Strategies for Effective Practice*. Routledge.
- Boud, D. (1998). *Current Issues and New Agendas in Workplace Learning*. ERIC.
- Bürgermeister, A., Glogger-Frey, I., & Saalbach, H. (2021). Supporting peer feedback on learning strategies: Effects on self-efficacy and feedback quality. *Psychology Learning & Teaching*, 20(3), 383–404. <https://doi.org/10.1177/14757257211016604>
- Butler, A. C., Godbole, N., & Marsh, E. J. (2013). Explanation feedback is better than correct answer feedback for promoting transfer of learning. *Journal of Educational Psychology*, 105(2), 290. <https://doi.org/10.1037/a0031026>
- Campbell, M. (2008). Learning in early-career police: Coming into the workplace. WACE/ACEN Asia Pacific Conference 2008 E-Proceedings, Sydney, Australia.
- Carless, D., & Boud, D. (2018). The development of student feedback literacy: Enabling uptake of feedback. *Assessment & Evaluation in Higher Education*, 43(8), 1315–1325. <https://doi.org/10.1080/02602938.2018.1463354>
- Cooke, A., Smith, D., & Booth, A. (2012). Beyond PICO: The SPIDER tool for qualitative evidence synthesis. *Qualitative Health Research*, 22(10), 1435–1443. <https://doi.org/10.1177/1049732312452938>
- Corral, D., Carpenter, S. K., & Clingan-Siverly, S. (2021). The effects of immediate versus delayed feedback on complex concept learning. *Quarterly Journal of Experimental Psychology*, 74(4), 786–799. <https://doi.org/10.1177/1747021820977739>
- Dawson, P., Henderson, M., Mahoney, P., Phillips, M., Ryan, T., Boud, D., & Molloy, E. (2019). What makes for effective feedback: Staff and student perspectives. *Assessment & Evaluation in Higher Education*, 44(1), 25–36. <https://doi.org/10.1080/02602938.2018.1467877>
- Demirkol, I. C., & Nalla, M. K. (2017). Sustaining police officers' motivation in aviation security. *Journal of Transportation Security*, 10(3), 171–187. <https://doi.org/10.1007/s12198-017-0185-6>
- Demirkol, I. C., & Nalla, M. K. (2018a). Enhancing motivation and job satisfaction of police officers: A test of high performance cycle theory. *Criminal Justice & Behavior*, 45(12), 1903–1917. <https://doi.org/10.1177/0093854818796873>
- Demirkol, I. C., & Nalla, M. K. (2018b). Predicting job satisfaction and motivation of aviation security personnel: A test of job characteristics theory. *Security Journal*, 31(4), 901–923. <https://doi.org/10.1057/s41284-018-0137-2>
- Di Nota, P. M., & Huhta, J.-M. (2019). Complex Motor Learning and Police Training: Applied, Cognitive, and Clinical Perspectives [Review]. *Frontiers in Psychology*, 10(1797). <https://doi.org/10.3389/fpsyg.2019.01797>
- Doornbos, A. J., Bolhuis, S., & Denessen, E. (2004). Exploring the relation between work domains and work-related learning: The case of the dutch police force. *International Journal of Training and Development*, 8(3), 174–190. <https://doi.org/10.1111/j.1360-3736.2004.00207.x>
- Doornbos, A. J., Simons, R. J., & Denessen, E. (2008). Relations between characteristics of workplace practices and types of informal work-related learning: A survey study among Dutch Police. *Human Resource Development Quarterly*, 19(2), 129–151. <https://doi.org/10.1002/hrdq.1231>
- Duval, E. (2001). Metadata standards: What, who & why. *Journal of Universal Computer Science*, 7(7), 591–601.
- Evans, C. (2013). Making sense of assessment feedback in higher education. *Review of Educational Research*, 83(1), 70–120. <https://doi.org/10.3102/0034654312474350>
- Fagan, M. M., & Ayers, K. (1985). Professors of the street - Police mentors. *FBI Law Enforcement Bulletin*, 54(1), 8–13.
- Fagan, M. M., & Walter, G. (1982). Mentoring among teachers. *Journal of Educational Research*, 76(2), 113–118.

- Fagan, M. . M. (1988). Formal vs. Informal mentoring in law enforcement. *Career Planning and Adult Development Journal*, 4(2), 40–48.
- Geister, S., Konradt, U., & Hertel, G. (2006). Effects of process feedback on motivation, satisfaction, and performance in virtual teams. *Small Group Research*, 37(5), 459–489. <https://doi.org/10.1177/1046496406292337>
- Greenhalgh, T., & Peacock, R. (2005). Effectiveness and efficiency of search methods in systematic reviews of complex evidence: Audit of primary sources. *BMJ*, 331(7524), 1064–1065. <https://doi.org/10.1136/bmj.38636.593461.68>
- Hargreaves, E. (2013). Inquiring into children’s experiences of teacher feedback: Reconceptualising assessment for learning. *Oxford Review of Education*, 39(2), 229–246. <https://doi.org/10.1080/03054985.2013.787922>
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge.
- Haughney, K., Wakeman, S., & Hart, L. (2020). Quality of feedback in higher education: A review of literature. *Education Sciences*, 10(3), 60. <https://doi.org/10.3390/educsci10030060>
- Havnes, A., Smith, K., Dysthe, O., & Ludvigsen, K. (2012). Formative assessment and feedback: Making learning visible. *Studies in Educational Evaluation*, 38(1), 21–27. <https://doi.org/10.1016/j.stueduc.2012.04.001>
- Henderson, M., Ajjawi, R., Boud, D., & Molloy, E. (2019). Identifying feedback that has impact. In M. Henderson, R. Ajjawi, D. Boud, & E. Molloy (Eds.), *The Impact of Feedback in Higher Education* (pp. 15–34). Springer.
- Hepplestone, S., & Chikwa, G. (2014). Understanding how students process and use feedback to support their learning. *Practitioner Research in Higher Education*, 8(1), 41–53.
- Higgins, R., Hartley, P., & Skelton, A. (2001). Getting the message across: The problem of communicating assessment feedback. *Teaching in Higher Education*, 6(2), 269–274. <https://doi.org/10.1080/13562510120045230>
- Holmgren, R., & Sjöberg, D. (2022). The value of informal workplace learning for police education teachers’ professional development. *Journal of Workplace Learning*, 34(7), 593–608. <https://doi.org/10.1108/JWL-04-2021-0040>
- Ilgen, D. R., Fisher, C. D., & Taylor, M. S. (1979). Consequences of individual feedback on behavior in organizations. *Journal of Applied Psychology*, 64(4), 349. <https://doi.org/10.1037/0021-9010.64.4.349>
- Janssens, L., Smet, K., Ongghena, P., & Kyndt, E. (2017). The relationship between learning conditions in the workplace and informal learning outcomes: A study among police inspectors. *International Journal of Training and Development*, 21(2), 92–112. <https://doi.org/10.1111/ijt.12095>
- Johnson, B., & Christensen, L. . B. (2020). *Educational Research : Quantitative, Qualitative, and Mixed Approaches* (7th ed.). SAGE.
- Jones, J. (2018). How can leaders and managers in the Police support the learning of others and at the same time, support their own? *International Journal of Emergency Services*, 7(3), 228–247. <https://doi.org/10.1108/IJES-04-2017-0026>
- Jonsson, A. (2013). Facilitating productive use of feedback in higher education. *Active Learning in Higher Education*, 14(1), 63–76.
- Kelly, M. . R. . (2018). *How does teacher to Student Feedback and the Teacher-Student Relationship Relate to Fourth and Fifth Grade Student Achievement in Writing as Measured by the Lucy Calkins Writing Rubric?* [PhD, Evangel University].
- Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance: A historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin*, 119(2), 254–284. <https://doi.org/10.1037/0033-2909.119.2.254>
- Kluger, A. N., & Van Dijk, D. (2010). Feedback, the various tasks of the doctor, and the feedforward alternative. *Medical Education*, 44(12), 1166–1174. <https://doi.org/10.1111/j.1365-2923.2010.03849.x>
- Koopmans, H., Doombos, A. J., & van Eekelen, I. M. (2006). Learning in interactive work situations: It takes two to tango; why not invite both partners to dance? *Human Resource Development Quarterly*, 17(2), 135–158. <https://doi.org/10.1002/hrdq.1166>
- Lam, C. F., DeRue, D. S., Karam, E. P., & Hollenbeck, J. R. (2011). The impact of Feedback Frequency on Learning and Task Performance: Challenging the “More is Better” Assumption. *Organizational Behavior and Human Decision Processes*, 116(2), 217–228. <https://doi.org/10.1016/j.obhdp.2011.05.002>

- Lamb, M., Sternberg, K. J., Orbach, Y., Esplin, P., & Mitchell, S. (2002a). Is ongoing feedback necessary to maintain the quality of investigative interviews with allegedly abused children? *Applied Developmental Science*, 6(1), 35–41. [https://doi.org/10.1207/S1532480XADS0601\\_04](https://doi.org/10.1207/S1532480XADS0601_04)
- Lamb, M., Sternberg, K. J., Orbach, Y., Hershkowitz, I., Horowitz, D., & Esplin, P. W. (2002b). The effects of intensive training and ongoing supervision on the quality of investigative interviews with alleged sex abuse victims. *Applied Developmental Science*, 6(3), 114–125. [https://doi.org/10.1207/S1532480XADS0603\\_2](https://doi.org/10.1207/S1532480XADS0603_2)
- Lefroy, J., Hawarden, A., Gay, S. P., McKinley, R. K., & Cleland, J. (2015). Grades in formative workplace-based assessment: A study of what works for whom and why. *Medical Education*, 49(3), 307–320. <https://doi.org/10.1111/medu.12659>
- Lundin, J., & Nulden, U. (2007). Talking about tools - Investigating learning at work in police practice. *Journal of Workplace Learning*, 19(4), 222–239. <https://doi.org/10.1108/13665620710747915>
- McClelland, M., Geldhof, J., Morrison, F., Gestsdóttir, S., Cameron, C., Bowers, E., Duckworth, A., Little, T., & Grammer, J. (2018). Self-regulation. In N. Halfon, C. B. Forrest, R. M. Lerner, & E. M. Faustman (Eds.), *Handbook of life course health development* (pp. 275–298). Springer.
- McGinley, B., Agnew-Pauley, W., Tompson, L., & Belur, J. (2020). Police Recruit Training Programmes: A Systematic Map of Research Literature. Policing. *A Journal of Policy and Practice*, 14(1), 52–75.
- McGrath, A. L., Taylor, A., & Pychyl, T. A. (2011). Writing helpful feedback: The influence of feedback type on students' perceptions and writing performance. *Canadian Journal for the Scholarship of Teaching and Learning*, 2(2), 5. <https://doi.org/10.5206/cjsotl-rcacea.2011.2.5>
- Mercader, C., Ion, G., & Diaz-Vicario, A. (2020). Factors influencing students' peer feedback uptake: Instructional design matters. *Assessment & Evaluation in Higher Education*, 1–12. <https://doi.org/10.1080/02602938.2020.1726283>
- Mertens, S., Schollaert, E., & Anseel, F. (2021). How much feedback do employees need? A field study of absolute feedback frequency reports and performance. *International Journal of Selection and Assessment*, 29(3–4), 326–335. <https://doi.org/10.1111/ijsa.12352>
- Miller, P. (2003). Workplace learning by action learning: A practical example. *Journal of Workplace Learning*, 15(1), 14–23. <https://doi.org/10.1108/13665620310458785>
- Monteiro, V., Mata, L., Santos, N., Sanches, C., Gomes, M., (2019). Classroom talk: The ubiquity of feedback. In *Frontiers in Education* (Vol. 4, p. 140). Frontiers Media SA. <https://doi.org/10.3389/educ.2019.00140>.
- Mofokeng, J. T. (2012). Perspectives on supervision and mentorship within the South African police detective service. *Acta Criminologica*, 70–84. <https://hdl.handle.net/10520/EJC138453>
- Molloy, E., Boud, D., & Henderson, M. (2019). Developing a learning-centred framework for feedback literacy. *Assessment & Evaluation in Higher Education*, 1–14. <https://doi.org/10.1080/02602938.2019.1667955>
- Norman, J., & Fleming, J. (2021). Utilising police knowledge and skills: Experiences from police practitioners studying a police specific degree. *International journal of police science & management*, 14613557211064051. <https://doi.org/10.1177/14613557211064051>
- O'Reilly, C. A., III., & Anderson, J. C. (1980). Trust and the communication of performance appraisal information: The effect of feedback on performance and job satisfaction. *Human Communication Research*, 6(4), 290–298. <https://doi.org/10.1111/j.1468-2958.1980.tb00150.x>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., McGuinness, L. A., Stewart, L. A., Thomas, J., Tricco, A. C., Welch, V. A., Whiting, P., & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *Bmj*, 372, n71. <https://doi.org/10.1136/bmj.n71>
- Powell, M. B., Fisher, R. P., & Hughes-Scholes, C. H. (2008). The effect of intra-versus post-interview feedback during simulated practice interviews about child abuse. *Child Abuse & Neglect*, 32(2), 213–227. <https://doi.org/10.1016/j.chiabu.2007.08.002>
- Powell, M. B., Wright, R., & Clark, S. (2010). Improving the competency of police officers in conducting investigative interviews with children. *Police Practice and Research: An International Journal*, 11(3), 211–226. <https://doi.org/10.1080/15614260902830070>
- Price, H. L., & Roberts, K. P. (2011). The effects of an intensive training and feedback program on police and social workers' investigative interviews of children. *Canadian Journal of Behavioural Science/revue Canadienne Des Sciences Du Comportement*, 43(3), 235. <https://doi.org/10.1037/a0022541>



- Price, M., Handley, K., Millar, J., & O'Donovan, B. (2010). Feedback: All that effort, but what is the effect? *Assessment & Evaluation in Higher Education*, 35(3), 277–289. <https://doi.org/10.1080/02602930903541007>
- Ramaprasad, A. (1983). On the definition of feedback. *Behavioral Science*, 28(1), 4–13. <https://doi.org/10.1002/bs.3830280103>
- Ranney, J. M., Zuschlag, M., Coplen, M., & Nelson, C. (2018). Combined peer-to-peer feedback and continuous improvement associated with reduced injuries at Amtrak-Chicago. *Safety Science*, 107, 130–144. <https://doi.org/10.1016/j.ssci.2017.06.010>
- Rivera, M., Qiu, L., Kumar, S., & Petrucci, T. (2021). Are traditional performance reviews outdated? An empirical analysis on continuous, real-time feedback in the workplace. *Information Systems Research*, 32, 517–540. <https://doi.org/10.1287/isre.2020.0979>
- Shute, V. J. (2008). Focus on formative feedback. *Review of Educational Research*, 78(1), 153–189. <https://doi.org/10.3102/0034654307313795>
- 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>
- Smets, L., & Pauwels, C. (2010). The feasibility and practicability of police training. Policing: An International Journal of Police Strategies & Management, 33(4), 664–680. <https://doi.org/10.1108/13639511011085079>
- Smets, L., & Rispens, I. (2014). Investigative interviewing and training: The investigative interviewer apprentice. In R. Bull (Ed.), *Investigative Interviewing* (pp. 147–166). Springer. [https://doi.org/10.1007/978-1-4614-9642-7\\_8](https://doi.org/10.1007/978-1-4614-9642-7_8)
- Steen-Utheim, A., & Hopfenbeck, T. N. (2019). To do or not to do with feedback. A study of undergraduate students' engagement and use of feedback within a portfolio assessment design. *Assessment & Evaluation in Higher Education*, 44(1), 80–96. <https://doi.org/10.1080/02602938.2018.1476669>
- Steen-Utheim, A., & Wittek, A. L. (2017). Dialogic feedback and potentialities for student learning. *Learning, Culture and Social Interaction*, 15, 18–30. <https://doi.org/10.1016/j.lcsi.2017.06.002>
- Steen-Utheim, A. T. (2019). Students' sense making of feedback. Dialogue, interaction and emotions [PhD, University of Oslo]. DUO Research Archive. <http://urn.nb.no/URN:NBN:no-71626>
- Straub, R. (1997). Students' reactions to teacher comments: An exploratory study. *Research in the Teaching of English*, 91–119.
- Strijbos, J.-W., Narciss, S., & Dünnebieer, K. (2010). Peer feedback content and sender's competence level in academic writing revision tasks: Are they critical for feedback perceptions and efficiency? *Learning and Instruction*, 20(4), 291–303. <https://doi.org/10.1016/j.learninstruc.2009.08.008>
- Tai, J.H.-M., Canny, B. J., Haines, T. P., & Molloy, E. K. (2016). The role of peer-assisted learning in building evaluative judgement: Opportunities in clinical medical education. *Advances in Health Sciences Education*, 21(3), 659–676. <https://doi.org/10.1007/s10459-015-9659-0>
- Telio, S., Ajjawi, R., & Regehr, G. (2015). The “educational alliance” as a framework for reconceptualizing feedback in medical education. *Academic Medicine*, 90(5), 609–614. <https://doi.org/10.1097/ACM.0000000000000560>
- 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>
- Van der Kleij, F. M., & Lipnevich, A. A. (2021). Student perceptions of assessment feedback: A critical scoping review and call for research. *Educational Assessment, Evaluation and Accountability*, 33(2), 345–373. <https://doi.org/10.1007/s11092-020-09331-x>
- Värlander, S. (2008). The role of students' emotions in formal feedback situations. *Teaching in Higher Education*, 13(2), 145–156. <https://doi.org/10.1080/13562510801923195>
- Virtanen, A., Tynjälä, P., & Collin, K. (2009). Characteristics of Workplace Learning Among Finnish Vocational Students. *Vocations and Learning*, 2(3), 153. <https://doi.org/10.1007/s12186-009-9022-9>
- Warren, A. R., Woodall, C. E., Thomas, M., Nunno, M., Keeney, J. M., Larson, S. M., & Stadfeld, J. A. (1999). Assessing the effectiveness of a training program for interviewing child witnesses. *Applied Developmental Science*, 3(2), 128–135. [https://doi.org/10.1207/s1532480xads0302\\_6](https://doi.org/10.1207/s1532480xads0302_6)
- Wood, D. . A. (2020). Embedding Learning and Assessment Within Police Practice: the Opportunities and Challenges Arising from the Introduction of the PEQF in England and Wales. *Policing. A Journal of Policy and Practice*, 14(2), 374–382.
- Wulf, G., Shea, C. H., & Matschiner, S. (1998). Frequent Feedback Enhances Complex Motor Skill Learning. *Journal of Motor Behavior*, 30(2), 180–192. <https://doi.org/10.1080/00222899809601335>
- Zacharias, N. T. (2007). Teacher and student attitudes toward teacher feedback. *RELC Journal*, 38(1), 38–52. <https://doi.org/10.1177/0033688206076157>

- Zhou, J., Dawson, P., Tai, J.H.-M., & Bearman, M. (2021). How conceptualising respect can inform feedback pedagogies. *Assessment & Evaluation in Higher Education*, 46(1), 68–79. <https://doi.org/10.1080/02602938.2020.1733490>
- Zhu, Q., & Carless, D. (2018). Dialogue within peer feedback processes: Clarification and negotiation of meaning. *Higher Education Research & Development*, 37(4), 883–897. <https://doi.org/10.1080/07294360.2018.1446417>

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

**Mr. Olav Dahl** is a section leader at the Norwegian Fire and Rescue Academy and a PhD-candidate at PHS and Norwegian University of Science and Technology. His main interests are feedback, guidance, further education, and workplace learning. <https://orcid.org/0000-0002-0039-843X>

**Dr. Marie-Louise Damen** is an associate professor at The Norwegian Police University College. She has a PhD in Social Sciences and her main research interests are learning, teaching, and the effects and consequences of education later in life. <https://orcid.org/0000-0003-0523-0537>

**Dr. Brita Bjørkelo** is a professor at The Norwegian Police University College. She is a clinical psychologist with a PhD in work- and organisational psychology, working on several projects on police leadership, psychosocial work environment and organization. <https://orcid.org/0000-0001-7535-2076>, e-mail: Brita.Bjorkelo@phs.no

**Mrs. Camilla Pellegrini Meling** is an academic librarian at The Norwegian Police University College. She has a BA-degree in Library and Information science, she works with systematic searches, and provides user guidance to students and academic staff.

**Mr. Magnus Rom Jensen** is a research librarian at NTNU University Library, NTNU – Norwegian University of Science and Technology, Trondheim, Norway. He is a specialist in systematic searches, End-Note, and NVivo.