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The impact of the feedback source on developing oral presentation competence

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While previous research in higher education emphasized the essence of feedback by the teacher, the peer or the self, it remains unclear whether the acquisition of students' oral presentation competence differs depending on the feedback source. This quasi-experimental study examines the effectiveness of the feedback source on 144 first-year undergraduate students' progression in cognition, behaviour and attitude towards presenting, as three interrelated elements of oral presentation competence. Mixed methods of multiple-choice tests and performance assessments using rubrics were used for data collection. Results demonstrated the superiority of teacher feedback for encouraging students' presentation behaviour, while cognition and attitude towards presenting developed significantly irrespective of the particular feedback source. However, the self-assessment condition revealed less impact on developing presentation behaviour and attitude compared to other feedback sources. Optimizing peer feedback and self-assessment in curricula requires knowledge about underlying feedback processes characterizing successful feedback of the various sources.

Keywords: assessment; feedback source; higher education; oral presentation competence; quasi-experimental design

Introduction

The ability to present is frequently regarded as one of the core competencies for professionals (Bourhis and Allen 1998; Kerby and Romine 2009). Within the higher education context, this competence domain is perceived as crucial for effective performance of graduates in various working environments (Smith and Sodano 2011), for career success and for effective participation in the democratic society (Chan 2011). Further, presenting is also acknowledged by policy-makers around the globe as an essential qualification of highly educated graduates. This emphasis is reflected in the Dublin Descriptors, a framework of qualifications that all European higher education institutions are required to adopt, in which one of the five competencies refers to 'communicating' (Joint Quality Initiative 2004). However, graduates often lack the competence required to speak in public (Chan 2011). In addition, public speaking is often considered as the most extensive fear that individuals experience in social situations (Smith and Sodano 2011). De Grez (2009, 5) defines oral presentation competence as: 'the combination of knowledge, skills and attitudes needed to speak in public in order to inform, self-express, to relate and to persuade'. To acquire

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such a competence, the cognitive, behavioural and affective components related to presenting should be taken into consideration (Mulder 2014). Students' performance can be enhanced or inhibited by any one or all of these components. For instance, improving students' knowledge about communication may improve their ability to communicate, which, in turn, may increase their willingness to communicate (Bower et al. 2011). Therefore, learning environments should be specifically designed to address these various components.

In this research field, a systematic literature review was conducted to synthesize previously studied learning environment characteristics into a comprehensive set of educational design principles for developing oral presentation competence (Van Ginkel et al. 2015). The study resulted in the formulation of seven principles related to the following crucial learning environment characteristics: learning objectives, learning task, behaviour modelling, opportunity to practice, intensity and timing of feedback, peer assessment and self-assessment (Van Ginkel et al. 2015). Taking these results together, the systematic review disclosed that three of the seven essential learning environment characteristics for developing this competence are related to the process of formative assessment, including the provision of feedback, peer assessment and self-assessment. A recently published review study on assessment and evaluation in higher education (Pereira, Flores, and Niklasson 2015) revealed that especially the last decade showed a large number of articles addressing formative assessment and modes of assessment (i.e. peer and self-assessment) and their assumed effectiveness. According to De Grez (2009), feedback and assessment play an essential role in the learning cycle of acquiring complex behaviour, such as developing oral presentation competence. Although feedback is one of the major influences on learning and achievement, the type of feedback and the way it is provided can be differentially effective (Hattie and Timperley 2007). Building on a broader theory about feedback (Falchikov 2005; Hattie and Timperley 2007), evidence in previous studies in this field showed positive effects of any kind of feedback on oral presentation performance over no feedback at all (Mitchell and Bakewell 1995; Smith and King 2004). Specifically in the context of higher education, Dochy, Segers, and Sluijsmans (1999) explored the use of co-, peer and self-assessment in higher education settings, and Nicol and Macfarlane-Dick (2006) elaborated a set of principles for good feedback in these contexts. However, despite several studies providing theoretical arguments and empirical evidence for the importance of feedback by the teacher (Mitchell and Bakewell 1995; Smith and King 2004; Kerby and Romine 2009), the peer (Mitchell and Bakewell 1995; Topping 1998; Cheng and Warren 2005) or the self (Bourhis and Allen 1998; Jensen and Harris 1999; Bower et al. 2011), it remains unclear whether the development of students' oral presentation competence, during the phase that the most progress can be expected – that is, between the first and the second presentation (Calcich and Weilbaker 1992) – differs depending on the specific feedback source (De Grez, Valcke, and Roozen 2009). By adopting a quasi-experimental design, this study aims at examining the effectiveness of different feedback sources, that is, the teacher, the peer and the self, on students' oral presentation competence development, as indicated by cognition (knowledge of presenting), behaviour (presentation skills) and attitudes (attitude towards presenting), in a higher education setting. The following sections elaborate on reviewing recent scientific literature examining knowledge about the effects of feedback sources on these three components of competence. Based on a discussion of relevant publications, the aim was to formulate a set of concrete hypotheses guiding the quasi-experimental study reported in this paper.

Review of recent literature

To summarize knowledge about the effects of the teacher, the peer and the self on components of oral presentation competence in higher education, a literature search was executed. Since purely focusing on the connection between feedback sources and oral presentation competence only yielded a limited number of studies, the definition of the dependent variable was widened. The search intended to find comparative studies focusing on the differential influence of feedback sources on cognition, skills and attitudes in any kind of competence development in the field of higher education.

Towards relationships between feedback sources and competence: a literature search

The following four inclusion criteria for the search were formulated. Firstly, any relevant publication should address the relationship between, at least, one of the feedback sources (the teacher, the peer or the self) and components of competence (cognition, skills or attitudes). Secondly, the article must be published in a peer-reviewed Institute for Scientific Information (ISI) indexed journal to obtain scientific fidelity. Thirdly, the study must be conducted in the field of higher education. Finally, to provide insight into recent scientific literature, the time span was restricted to publications from 2008 through 2014.

The following keywords were used for addressing the subject: feedback and assessment. In addition, keywords relating to the independent variable contained teacher, peer and/or self. The keywords referring to the dependent variable were cognition, skills, attitude and competence. Furthermore, to accentuate the relationship between the independent and dependent variables, the following action verbs were selected: develop, improve, encourage, increase and enhance. Additionally, the context was specified by adopting higher education in the search strategy. Finally, the Web of Science was used as search engine to identify only ISI-published articles.

The search yielded 95 potentially relevant scientific articles. After critically reading and analysing the abstracts, 24 scientific articles were considered as relevant, while 71 articles did not reflect the inclusion criteria. These 71 articles were omitted from the yield, since these articles failed to address the relationship between one of the feedback sources and components of competence (35); focus on the learning process of the student as actor (15); mention one of the predefined components of competence (7); contain one of the predefined feedback sources – while solely addressing the construction of assessment instruments – (6); share their findings in the English language instead of Spanish for example (4); conduct the research project in the context of higher education (2) and relate their research questions to formative assessment – while solely focusing on summative assessment – (2).

The yield of the search: impacts of feedback sources on cognition, skills and attitudes

The 24 relevant publications were published in a wide range of domains, varying from Teacher Education, Psychology to Medical Studies. In addition, these studies were written by researchers from differing Western and non-Western countries. This section describes found relationships between feedback sources and components of competence used to formulate hypotheses for this study. Initially, the tutor was not

included as keyword in the literature search, since a previous review study in the field of presenting (Van Ginkel et al. 2015) mentioned the teacher, the peer and the self as crucial suppliers of feedback. However, several studies in this search highlighted the tutor as a relevant and frequently mentioned feedback source in higher education. Therefore, the results described below also differentiate the tutor next to the teacher, the peer and the self. The tutor as feedback source is mostly defined as a second- or third-year student acting in the role of 'student-assistant'.

Firstly, in four of the 24 selected publications relationships between one or more feedback sources and the development of students' cognition were studied. One of these studies reported positive impacts of peer feedback, in an online collaborative learning environment, on developing knowledge of psychological concepts within an undergraduate course (Kelly, Baxter, and Anderson 2010). The other studies addressed empirical findings for positive influences of peer feedback, in combination with feedback from teachers (Yalaki 2010; Ng 2014) or feedback from tutors (Longfellow et al. 2008), on acquiring concepts of Information and communications technology (Ng 2014) or developing knowledge towards writing and linguistics (Longfellow et al. 2008). None of the studies addressed the impact of self-assessment on encouraging students' cognition. Although two publications adopted more than one feedback source as focus of their study (Longfellow et al. 2008; Ng 2014), none of the four publications studied the differential impact of feedback sources on students' knowledge acquisition. One researcher (Ng 2014) reported, based on a survey among students, that feedback from teachers was valued as more important than feedback from peers for developing knowledge of technology. Considering the research methods of the four publications, only one study adopted a quasi-experimental study design (Yalaki 2010). Thus, based on these few studies and findings, no concrete hypothesis could be formulated concerning the differential impact of the feedback sources on developing students' cognition towards presenting.

Secondly, in 21 of the 24 selected articles relationships between one or more feedback sources and the development of students' skills were studied. All studies addressed positive impacts of the teacher, the peer, the self and/or the tutor on a wide variety of skills, such as scientific writing skills (7), reflection skills (4), communication skills (4), problem-solving skills (3), technical skills (2), presentation skills (1), language skills (1), transferable skills (1) and higher order thinking skills (1). In 10 studies, the relationship between a single feedback source and skill development was examined. Examples concern the influence of the teacher on developing students' writing skills (Yalaki 2010; Harran 2011), the impact of the peer on encouraging students' language skills (Wang et al. 2013), transferable skills (McGarr and Clifford 2013) or higher order thinking skills (Tsaushu et al. 2012) and self-feedback on students' reflection skills (Bourke 2014) or communication skills (Von Konsky and Oliver 2012). Eight other articles described the relationship between two feedback sources and developing this component of competence. Examples refer to the impact of peer and teacher feedback on developing scientific writing skills (Clarke et al. 2013), the influence of feedback from teachers and the self on acquiring communication skills (Murdoch-Eaton and Whittle 2012) and the impact of feedback from peers and the self on developing technical and reflection skills (Wakimoto and Lewis 2014). In another three studies, the relationships between more than two feedback sources and their impact on skills were studied (De Grez, Valcke, and Roozen 2009; Nicol 2009; Kim 2013). Although these studies reported positive impacts on presentation skills (De Grez, Valcke, and Roozen 2009), reflection and writing skills (Kim 2013), only

1 of the 21 studies focused on the differential impact of the feedback sources on skills development. The quasi-experimental study of De Grez, Valcke, and Roozen (2009) suggested a trend in the effectiveness of feedback from the teacher, the peer or the self on students' presentation skills; even though not significant, the progress of presentation skills for students who received feedback from the teachers was 13%, 7.5% for peer feedback and 0.2% for students who developed feedback through self-assessment (De Grez, Valcke, and Roozen 2009). Important to note was that this feedback was provided between the second and third presentation performance, not between the first and the second. Moreover, other researchers also reported tendencies towards differential impacts on skills development, based on additional findings derived from the analyses of surveys (Ng 2014) or focus group sessions (Asghar 2010). Ng (2014) concluded that students valued the feedback they received from the teacher to a higher extent than the feedback they received from peers to develop their technical skills. In that particular study, teachers' feedback was considered as more accurate and comprehensive than that of peers and so more improvements in learning could be expected (Ng 2014). In another study, Asghar (2010) described, based on empirical findings, that tutor feedback was considered as more valuable for students' learning than feedback from peers while developing reflection skills. Arguments for the results contained that the feedback from tutors was regarded as more valuable, because of tutors' knowledge and authority. Taking these findings together, although some differential impacts of feedback sources on developing skills are stated in favour of the teacher, and also the tutor, instead of the peer and the self, again no convincing differential hypothesis could be formulated since most results were not significant and/or based on non-experimental study designs directed by non-comparative research questions.

Thirdly, in 2 of the 24 selected studies relationships between one or more feedback sources and the development of students' attitudes were studied. One study reported positive impacts of teacher feedback on students' attitude towards writing (Harran 2011). Based on student perceptions in a four-year longitudinal study, this author concluded that feedback from the teacher was valued for being specific and non-directive. The other study reflected positive influences of a combination of several feedback sources, containing the teacher, the peer, the self and the tutor, on encouraging students' attitude towards performances within large-scale courses in the domains of psychology and linguistics (Nicol 2009). Although empirical evidence exists in both of these studies, none of the two publications adopted comparative research questions concerning the differential impact of feedback sources towards enhancing students' attitude. In addition, findings were based on non-experimental studies in which the feedback source was not studied as an independent variable isolated from other learning environment characteristics that could possibly influence the outcome variable. Thus, considering these findings, again, no specific hypothesis could be formulated regarding the differential effects of the feedback sources on students' attitudes.

Conclusions from the literature

In summary, taking the findings of this review of recent literature together, there is little evidence for differential effects of feedback sources on the development of cognition, skills or attitude in the higher education context. Therefore, the potential impact of the feedback sources, the teacher, the peer, the self and the tutor, will be researched by using explorative testing in a quasi-experimental study design.

Methods

Participants

In the academic year 2013–2014, 144 university first-year undergraduate students enrolled in five identical oral presentation courses of a Dutch university in the domain of life sciences. Fifty-seven students followed these courses in the context of their Bachelor programme *Forest and Nature Conservation* (male = 30; female = 27); the other 87 students participated within the Bachelor programme *Nutrition and Health* (male = 13; female = 74).

Context of the study

The design of the presentation courses was based on seven educational design principles for developing oral presentation competence in higher education relating to learning objectives, learning task, behaviour modelling, opportunity to practice, intensity and timing of feedback, peer assessment and self-assessment (Van Ginkel et al. 2015). Normally, all learning environment characteristics were reflected in the presentation courses. Firstly, individual learning objectives were formulated based on a set of rules about how to formulate such objectives. Secondly, students were required to conduct an individual presentation of five minutes twice during the course. Thirdly, before these individual presentations started, students learned about successful and non-successful presentation behaviour in a plenary setting. Fourthly, students had the opportunity to practice their presentation skills multiple times within the course, both in a group and individually. Fifthly, in a plenary group discussion, students shared their own ideas and rules about providing feedback with each other. Sixthly, in smaller group sessions, students acted as peers in providing each other feedback based on a list of presentation criteria. Seventhly, students critically reflected on their own presentation performance using videotapes and portfolio. This research manipulated the last two principles (cf. different feedback sources), leaving the other five elements as they were. Next to this, also the structure of the presentation courses was comparable to the regular courses, since each course consisted of three sessions. After a first plenary session, students were divided in smaller groups, of approximately eight students, in which each student carried out two individual presentations. Students were required to perform a five-minute presentation, strictly monitored by the facilitator of the group, on a self-selected topic in the second and in the third session of the course.

Instructional conditions

The participants were, for each of the five presentation courses, randomly assigned to one of the following four feedback conditions: (1) teacher feedback ($n = 36$); (2) peer feedback ($n = 36$); (3) self-assessment ($n = 37$) and (4) peer feedback guided by tutor ($n = 35$). After the first presentation, the received feedback was determined by the feedback condition. In the first condition, students received five minutes of feedback from the teacher after their individual presentation based on a rubric instrument for developing presentation skills (see for rubric next section). Research showed that using a qualitative rubric fosters good feedback processes that can aid student learning (Panadero and Jonsson 2013). In this condition, students were not allowed to participate in the feedback procedure to guarantee that the presenter only received feedback from the teacher. In the second condition, students received five minutes of feedback solely from several peers after their individual presentation. Again, the rubric instrument served as a feedback

framework for the peers. During the session, the tutor was not allowed to intervene in the feedback process. In the third condition, it was required to present without any direct feedback from the tutor or the peers. Afterwards, students were instructed to actively reflect on their individual presentation by facilitating them to study their performance on video, accompanied with the presentation rubric and guided by questions that encourage the process of reflection (Korthagen and Vasalos 2005). Regarding the fourth condition, students received, in total, five-minute feedback from peers guided by tutors (third-year students) after their individual presentation. This condition represented the setting in regular presentation courses within the university, in which tutors were encouraged to intervene in order to guide the process of feedback.

Dependent variables and instruments

In this pre- and post-test quasi-experimental study design, performances of all students were assessed addressing the crucial components of oral presentation competence: cognition, behaviour and attitude.

Firstly, the development in students’ cognition towards presenting was tested using two comparable multiple-choice tests: one before the first presentation and the other after the second presentation. The six questions of the test corresponded to the widely accepted main criteria for presentations, as indicated by Van Ginkel et al. (2015), regarding aspects such as content of the presentation, structure of the presentation, interaction with the audience and presentation delivery. An example of an adopted question, referring to the structure of the presentation, is ‘Which three elements are essential in the introduction of a presentation?’ The score on each test was calculated by the sum of correct answers, ranging from zero to six.

Secondly, students’ developments in presentation behaviour were assessed by adopting a rubric instrument that consisted of 11 sub-criteria, derived from the following four main presentation criteria: content of the presentation (e.g. internalizing the subject of the presentation and connecting the subject to the prior knowledge of the audience), structure of the presentation (e.g. connecting the introduction to the closing part of the presentation), interaction with the audience (e.g. keeping the attention of the audience) and presentation delivery (e.g. ensuring eye contact with the audience, an open posture and illustrative gestures and a functional use of voice). The sub-criteria were all worked out in five performance levels. Each level qualitatively described the behaviour shown at this level (see Figure 1 for an example of a sub-criterion). The assessments were, for each condition, conducted by the same person in the pre- and the post-tests. In the first condition, the assessments were carried out by the feedback provider, the teacher. In the other conditions the tutor, who facilitated the particular session, assessed the students. To ensure the validity of the instrument, the rubric had been (1) compared with similar instruments in higher education (Jonsson and Svingby 2007; Rezaei and Lovorn 2010) and (2) validated among academic skills trainers. First of all, based on a critical analysis of earlier reviewed articles in this field of presentation research (Van Ginkel et al. 2015), it was stated that the four main presentation criteria were

	++ (10)	+ (8)	+/- (6)	- (4)	-- (2)	Score
<i>Posture and gestures</i>	The student is able to maintain an open posture continuously with illustrative gestures.	The student is able to maintain an open posture for most of the time with supporting gestures.	The student is able to maintain an open posture on a regular basis, both with supporting and non-supporting gestures.	The student is able to maintain an open posture occasionally with mainly non-supporting gestures.	The student has an unstable or closed posture for most of the time with non-supporting gestures.	

Figure 1. An example of a sub-criterion within the rubric oral presentation skills.

reflected in various instruments within 38 publications (Pittenger, Miller, and Mott 2004; Kerby and Romine 2009; De Grez, Valcke, and Roozen 2012). These criteria were also mentioned in nine studies that specifically used a rubric as assessment instrument (Carroll 2006; Reitmeier and Vrchota 2009). Another finding of this analysis referred to the adoption of five performance levels related to the defined criteria in the majority of these publications. Subsequently, the rubric instrument was validated among 24 trainer experts from different Dutch universities who answered four questions about the rubric on a 5-point Likert scale. This questionnaire contained aspects such as 'applicability in educational practice' and 'completeness regarding identified criteria, levels and scales'. Regarding an average score of four out of five, the assessment instrument was considered, by the researchers of this study, as valid. For this study, the scores of students' presentation performance were determined by taking the average of scores on the 11 sub-criteria. Finally, the internal consistency of the rubric instrument was calculated and showed an acceptable reliability coefficient (Cronbach α : .710).

Thirdly, the development of students' attitude towards presenting was measured by means of a self-evaluation test consisting of five items scored on a 5-point scale. These items relate to the self-perceived level of challenge, motivation and relevance of conducting a presentation (Bower et al. 2011). An example of an item concerns the following proposition: 'I consider presenting as a relevant skill in the context of my studies'. The score on each test was determined by the average of the scores on the five items. The reliability coefficient revealed an acceptable score (Cronbach α : .765).

Procedure

At the start of the first meeting, all students completed both the cognitive pretest and the attitude pretest. At the end of the third meeting, students fulfilled both post-tests. The development of presentation behaviour was measured in the smaller group settings after students' first presentation in the second meeting (pretest) and after their second presentation in the third meeting (post-test) of the course. These assessments were conducted by an assessor facilitating the particular feedback condition during the course. This assessor was a teacher or tutor (depending on the particular feedback condition), trained in using the rubric instrument during one plenary meeting and individual coaching prior to the experiment.

Data analysis

Firstly, paired-samples *t*-tests were applied to trace the progress in students' development between the pre- and post-tests, concerning the three components of oral presentation competence in each of the feedback conditions. Secondly, univariate analyses of variance were used to verify to what extent students' development between the pre- and post-tests in each of the three components depended on the specific feedback condition. Thirdly, Games–Howell post hoc analyses were conducted to determine between which feedback groups significant differences existed.

Results

This section describes the extent to which the feedback sources influence first-year undergraduate students' presentation scores related to cognition, behaviour and attitude consecutively.

The impact of the feedback source on cognition towards presenting

Paired *t*-test results revealed that students' development of cognition increased significantly ($p < .01$) for each of the four feedback conditions (Table 1). Additional analysis showed that no significant differences ($F(3, 130) = 1.17; p = .32$) in students' progress could be determined between the four constructed feedback conditions.

The impact of the feedback source on presentation behaviour

Students' presentation performances for each of the four feedback conditions increased significantly ($p < .01$; see Table 2). Further analysis disclosed significant differences between the impact of the feedback sources ($F(3, 131) = 6.36; p < 0$). The following feedback sources significantly differed with respect to the impact on presentation behaviour: (1) the teacher feedback condition scored significantly higher than the peer feedback condition ($t = 0.47; p = .02$); (2) the teacher feedback condition scored significantly higher than the self-assessment condition ($t = 0.63; p < 0$); (3) the teacher feedback condition scored significantly higher than the peer feedback condition guided by the tutor ($t = 0.41; p = .03$).

The impact of the feedback source on attitude towards presenting

The progress of students' attitude towards presenting proved to be significant ($p < .05$) for all of the feedback conditions, except for the self-reflection condition (see Table 3). However, results indicated no significant differences between the impact of the various feedback sources on students' attitude towards presenting ($F(3, 128) = 2.18; p = .09$).

Conclusions and discussion

This quasi-experimental study aimed to examine the effectiveness of different feedback sources, that is, the teacher, the peer, the self and the peer guided by tutor, on the competence development of 144 students, relating to oral presentation cognition, behaviour and attitude, in a higher education setting. Results of this study show that the overall progression of cognition, behaviour and attitude towards presenting, between the first and second presentation performances, turned out to be substantial. This finding supports the idea of the close interrelatedness of these three components of oral presentation competence (Mulder 2014; Van Ginkel et al. 2015). However, presentation behaviour proved to be more sensitive than cognition and attitude to the influence of the feedback source. This might be caused by the fact that the provided feedback, irrespective of feedback conditions, was guided by a rubric specifically designed to serve as a feedback instrument for developing oral presentation skills. Cognition and attitude towards presenting were more implicitly incorporated in this rubric instrument. For example, if 'the structure of a presentation' was logical (presentation behaviour), the student implicitly revealed knowledge about selecting an adequate structure for a presentation (cognition towards presenting). The finding that presentation behaviour developed most in the teacher feedback condition might suggest that the teachers more optimally used the rubric in their feedback.

The essential role of the teacher as expert in student learning is frequently mentioned in the 'expert literature' within higher education (Reis and Renzulli 2010). More specifically applied to the field of developing academic and professional skills,

Porte et al. (2007) argued that verbal feedback from the expert is crucial in developing students' skills. In addition, Van Haaren and Van der Rijst (2014) emphasized that teachers as experts fulfil an essential role as role models in student learning. Furthermore, their influence as facilitators of peer feedback processes should not be underestimated. In a study aimed for finding design principles for peer assessment in higher education, Van den Berg, Admiraal, and Pilot (2006) frequently emphasized the crucial role of the teacher as designer and facilitator of effective peer feedback processes. In this experiment, peer feedback was only provided by students themselves or in combination with the guidance of tutors. Both in the conditions 'peer feedback' and in 'peer feedback guided by tutor', the impact of the specific feedback source on developing students' presentation behaviour was less compared to the influence of the teacher. However, previous studies have revealed positive effects of peer assessment on skill development after students received assessment training prior to feedback processes (Dochy, Segers, and Sluijsmans 1999). In addition, working with detailed rubrics should also facilitate the provision of effective peer feedback among students. It is questionable to what extent these strategies could make peer assessment as effective as feedback from teachers. Therefore, it is required to explore how peers and tutors use this rubric in comparison to its use by teachers. And, how do teachers provide their feedback and what kind of aspects of the rubric do they focus on? Future studies are necessary that specifically focus on these feedback processes in depth.

Besides the mentioned essence of the role of the teacher and potentials for peer feedback, the limited impact on both presentation behaviour (see also Table 2) and attitude towards presenting (see also Table 3) of the self-assessment condition provides room for discussion among teachers and researchers in the higher education

Table 1. Mean scores, SDs and *N* related to cognition for the four instructional conditions.

Feedback group	Cognition test (pretest)	Cognition test (post-test)	Mean difference
1. Teacher feedback			
Mean	4.13	5.19	1.06**
SD	1.02	0.83	1.12
<i>N</i>	31	31	31
2. Peer feedback			
Mean	4.00	5.26	1.26**
SD	1.10	0.90	1.26
<i>N</i>	34	34	34
3. Self-assessment			
Mean	4.08	5.57	1.49**
SD	1.09	0.65	1.17
<i>N</i>	35	35	35
4. Peer feedback guided by tutor			
Mean	3.71	5.29	1.58**
SD	0.97	0.90	1.23
<i>N</i>	31	31	31
Total			
Mean	3.98	5.33	1.35**
SD	1.05	0.83	1.20
<i>N</i>	131	131	131

Note: * $p < .05$; ** $p < .01$.

Table 2. Mean scores, SDs and *N* related to behaviour for the four instructional conditions.

Feedback group	Behaviour test (pretest)	Behaviour test (post-test)	Mean difference
1. Teacher feedback			
Mean	6.74	7.75	1.01**
SD	0.82	0.76	0.68
<i>N</i>	34	34	34
2. Peer feedback			
Mean	7.09	7.63	0.54**
SD	0.73	0.69	0.60
<i>N</i>	33	33	33
3. Self-assessment			
Mean	7.43	7.80	0.37**
SD	0.70	0.61	0.69
<i>N</i>	34	34	34
4. Peer feedback guided by tutor			
Mean	6.89	7.49	0.60**
SD	0.57	0.53	0.46
<i>N</i>	31	31	31
Total			
Mean	7.04	7.67	0.63**
SD	0.75	0.66	0.65
<i>N</i>	132	132	132

Note: * $p < .05$; ** $p < .01$.

field. The strengths of students as active participants in formative assessment and self-regulated learning are recently and frequently discussed (Nicol and Macfarlane-Dick 2006). However, a self-assessment condition for developing oral presentation skills, in which students are the only suppliers of feedback on their own performance, appeared to be limited. The following arguments could be adduced for the lack of impact of the self-assessment condition. Firstly, in line with earlier arguments, several studies in the field of higher education (Higgins, Hartley, and Skelton 2002) express the role of an external feedback source on the development of students' academic skills and also in discussing reflection skills and positive attitudes towards reflection. Secondly, critically looking at the intended reflection processes, it remains questionable to what extent the students in this self-assessment condition fully gained from the reflection cycle as designed by Korthagen and Vasalos (2005) and how they used the assessment rubric and its elements in their reflection. In this study, students were asked to reflect on their video performances, guided by a couple of questions related to this model. However, a critical analysis towards the data collection showed that a third of the students in the self-assessment condition did not return their reflection forms. This finding suggests that not all students actively reflected on their first presentation in order to further develop their performance. Moreover, in order to encourage students' skills, Korthagen and Vasalos (2005) argued that the process of reflection requires considerable time for a deeper understanding, awareness of essential aspects or alternative methods of actions and also discussion about these findings in classroom.

Both the limited reflection in the self-assessment condition and the orientation of the rubric towards developing behaviour instead of cognition or attitude could have influenced the results. Another limitation of this study refers to the possible bias in

Table 3. Mean scores, SDs and *N* related to attitude for the four instructional conditions.

Feedback group	Attitude test (pretest)	Attitude test (post-test)	Mean difference
1. Teacher feedback			
Mean	3.14	3.35	0.21*
SD	0.75	0.67	0.48
<i>N</i>	31	31	31
2. Peer feedback			
Mean	3.34	3.55	0.21**
SD	0.68	0.57	0.43
<i>N</i>	33	33	33
3. Self-assessment			
Mean	3.27	3.34	0.07
SD	0.75	0.68	0.38
<i>N</i>	34	34	34
4. Peer feedback guided by tutor			
Mean	3.05	3.41	0.36**
SD	0.59	0.61	0.50
<i>N</i>	31	31	31
Total			
Mean	3.20	3.41	0.21**
SD	0.70	0.63	0.46
<i>N</i>	129	129	129

Note: * $p < .05$; ** $p < .01$.

the yield of the scientific literature aimed to formulate the hypotheses for this study. In the search strategy, only positively formulated action verbs were adopted that could have resulted in findings addressing mainly positive influences on competence, while ignoring possible studies that revealed no or negative relationships between the selected variables. Therefore, future studies conducting literature searches should take this aspect into account. Regarding the empirical findings of this study, an additional question can be raised about the scientific and practical value of the identified crucial educational design principles of peer and self-assessment for developing presentation competence (Van Ginkel et al. 2015) as teacher feedback still seems superior. In line with this, Nicol and Macfarlane-Dick (2006) emphasized that external feedback from teachers is essential and can help substantiate student self-regulation. To further refine principles for formative assessment, formulated in previous higher education studies (Nicol and Macfarlane-Dick 2006; Van den Berg, Admiraal, and Pilot 2006), what circumstances should be created to make peer and self-assessment processes more effective for developing oral presentation competence and/or components thereof? The design of formative assessment processes in the specific field of developing academic skills leaves challenges for educational practitioners. What choices are curriculum designers advised to make within developing academic skills courses in a time when student numbers are rising (Higgins, Hartley, and Skelton 2002), while in-class instruction time and possibilities for teacher–student interactions (De Grez, Valcke, and Roozen 2009) are decreasing? Further research is required to identify what makes teacher feedback superior and the self-assessment condition inferior. More in-depth insights into the underlying processes can help to optimize, both in the sense of effectivity and efficiency, peer feedback and self-assessment in academic skills courses.

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