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Structuring peer assessment: Comparing the impact of the degree of structure on peer feedback content

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ABSTRACT

The present study examines the added value of structuring the peer assessment process, by providing students with a peer feedback template with a varying structuring degree, for the peer feedback content quality in a wiki environment in higher education. The present study took place in the 1st year of a university course in Instructional Sciences ($N = 176$) and more specifically compared three conditions: no structure peer feedback (control), basic structure peer feedback, and elaborate structure peer feedback condition. Quantitative content analysis of students' ($n = 41$) peer feedback messages was performed, and an analysis of (co)variance revealed some discrepancies between the conditions regarding the proportion of peer feedback content categories: (1) peer feedback style, (2) verification type, (3) verification focus, (4) elaboration type, and (5) elaboration focus. This study demonstrated that a higher structuring degree in a peer feedback template during the peer assessment process might have an impact on peer feedback content with respect to the above-mentioned categories; the peer feedback content. Results revealed significant differences between the three conditions regarding the peer feedback content categories. This study illustrated how a practical instructional intervention in the feedback process can increase the potential impact of peer assessment and boost students' learning in higher education.

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1. Introduction

A large body of research underlines the power of assessment *for* the learning process (Evans, 2013; García, García-Álvarez, & Moreno, 2014; Kennedy, Chan, Fok, & Yu, 2008; Pellegrino, Chudowsky, & Glaser, 2001). The shift from 'assessment of learning' towards 'assessment for learning' requires learners to be actively involved in all phases of the assessment process (Boud & Molloy, 2013; Dysthe, 2004). Assessment provides learners with an indication of not only their strengths and weaknesses, but also of the next steps to be taken in the learning process. Therefore, the value of implementing more formative assessment approaches in education – in order to answer the call for more assessment *for* learning – have been advocated widely in the literature (e.g. Black & William, 1998; Sadler, 1989; Strijbos & Sluijsmans, 2010). However, many questions remained unanswered on how the formative assessment practices should be implemented into educational practice to boost students' learning in higher education (Sadler, 2010). As a common method of formative assessment, peer assessment (PA) has demonstrated its educational value for learning (see e.g. Topping, 2010). More particular, the educational potential of online PA for students' learning has been widely discussed (eg. Cheng, Liang, & Tsai, 2015). In this respect, research has shown that involving learners in online PA activities appeared for example to have an advantageous effect on students' writing performance (eg. Gielen & De Wever, 2015). Yet, research on PA in higher education is "very variable in type and quality, scattered and fragmentary in nature" (Topping, 1998, p. 267; see also Evans, 2013, who still presents the same conclusion) up to now. When being involved in formative PA practices, the assessor needs to be proficient in order to deal with specific assessment criteria, evaluate a peer's performance and finally, compose a valuable peer feedback message. On the other hand, the assessee needs to be capable to question the assessor's peer feedback and to make changes accordingly, where the assessee is willing to follow the assessors' advice, in order to augment the quality of the performance (Hovardas, Tsivitanidou, & Zacharia, 2014). Previous research stresses that PA practices require more 'constructive alignment' (Biggs, 1996), in which specific PA practices should be intentionally tailored in function of expected students' learning (see also Strijbos & Sluijsmans, 2010).

When we examine earlier research on PA, we can notice that within the field of PA, peer feedback in particular is often seen as an important educational practice of PA (e.g. Falchikov, 1995). Also, other review studies identify peer feedback as a constructive

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technique to enhance students learning (e.g. Topping, 1998), such as enhancing the quality of the students' writing (Van Zundert, Sluijsmans, & van Merriënboer, 2010). Previous research illustrated that peer feedback on the social performance of individual group members can increase the performance and attitudes of a CSCL-group (Phielix, Prins, & Kirschner, 2010). However, research on the impact of peer feedback on students' learning is lacking (Hattie & Timperley, 2007). Although there is some research that indicates that feedback content appears to play an essential role (e.g. Cho & MacArthur, 2010), detailed studies on how divergent peer feedback content is influencing students' activities is lacking (Strijbos, Narciss, & Dünnebier, 2010). For this reason, research has advocated that all responsible actors such as instructors and researchers should attempt to shed more light on the required type of structure and support an assessor needs in order to compile high quality peer feedback (Hovardas et al., 2014).

Therefore, the present study wants to examine the content of peer feedback in detail. More specifically, this study builds on an earlier study (Gielen & De Wever, 2015) in which the added value of different peer feedback forms, with a varying degree of structuring, was studied in a wiki environment in higher education, with respect to product scores. Also, a general peer feedback quality index (Prins, Sluijsmans, & Kirschner, 2006) was used to assess the content quality of peer feedback messages. However, the content of the peer feedback was not analysed in detail. Therefore, this present study, which provides a developed content analysis scheme (which will be further discussed in this article) to explore the specific peer feedback content quality, was set up. In order to study the peer feedback content quality in more detail.

1.1. Peer assessment for learning: Peer feedback as an educational practice

With regard to assessment *for* learning, formative assessment is "specifically intended to provide feedback on performance to improve and accelerate learning" (Sadler, 1998, p. 77). Feedback can be perceived as a practice of formative assessment, which attempts to close the gap between current and desired performance (Sadler, 1989). As an embraced method of formative assessment, PA has been attributed a lot of potential (Black & William, 1998). In this respect, a continuously growing body of research pointed out the value of PA both as an assessment tool (e.g. Cheng & Warren, 1997) and as a learning tool (e.g. Topping, 1998). PA challenges learners in providing feedback on a peer's performance. However, we cannot assume that all students will be competent to offer high quality feedback for several reasons one of which is proficiency (eg. Cheng et al., 2015). In this respect, previous research emphasised on the fact that students will require unique skills to perform their role as assessor and assessee proficiently (Hovardas et al., 2014). More specifically, learners develop skills to compile judgments about the quality of a peer's work, based on specific expectations of high-quality work (Topping, 1998). Based on this, the present study focuses on peer feedback as an educational approach of PA.

Following Hattie and Timperley (2007), in order to enhance learning when there is a discrepancy between what is understood and what is aimed to be understood, feedback should provide answers on three major feedback questions: 'Where am I going?', 'How am I going?', and 'Where to next?'. To improve performance, previous research has emphasised on identifying which feedback features should be included or excluded to benefit the understanding of feedback (e.g. Nelson & Schunn, 2008). Feedback content appears to be crucial for the impact of peer feedback on learning and performance (e.g. Cho & MacArthur, 2010). Related to this, earlier research investigated simple versus elaborated feedback (Narciss, 2006, 2008) and concise general versus elaborated specific feedback (Strijbos et al., 2010). Topping (2010) comments that elaborated and specific feedback leads to better performance. Although a growing body of research claims that feedback has a powerful impact on both learning and performance (e.g. Nelson & Schunn, 2008), a review study recently revealed that more research on the *impact of peer feedback on learning and performance is needed* (eg. Evans, 2013).

1.2. Peer feedback content

Previous literature highlights that the quality of a feedback message is determined by its content, template, and function (Narciss, 2006, 2008; Narciss & Huth, 2004; Shute, 2008). As the power of peer feedback heavily depends on its content (e.g. Cho & MacArthur, 2010), it is important to reflect on what exactly defines peer feedback content quality. In earlier studies, the developed Feedback Quality Index (Prins et al., 2006) was incorporated to measure the quality of feedback, with the help of a scoring rubric (e.g. Gielen and De Wever, 2015, 2012). In the present study, however, the aim was to take a closer look at the peer feedback content and more specifically at the peer feedback style, type, and focus of messages that peers provide to each other during writing assignments in a wiki-based CSCL environment. In the following paragraphs, these categories will be discussed in further detail.

With regard to the *peer feedback style*, a growing body of research suggests that the content of an effective feedback message should provide two types of information: verification and elaboration (Kulhavy & Stock, 1989; Narciss, 2008), and preferably includes both elements (e.g. Bangert-Drowns, Kulik, Kulik, & Morgan, 1991; Mason & Bruning, 2001). In this study, we will distinguish between verification and elaboration and a third category "general", which refers to general statements that can be labelled as neither verification nor elaboration. Verification can be described as "a dichotomous judgment to indicate that a response is right or wrong" (Hattie & Gan, 2011, p. 253) and an elaboration is the component of the feedback message, which "contains relevant information to help the learner in error correction" (Hattie & Gan, 2011, p. 253). Complementary to peer feedback style, we discuss the category *peer feedback type* for both verifications and elaborations, as students require feedback that tells them not only if they dealt with particular criteria correctly or not, but also why and what they should do about it to improve their work. (eg. Coll, Rochera, & De Gispert, 2014). Related to this, previous research revealed that offering additional informational feedback, which justifies a particular evaluation, is beneficial for students' performance (Walker, 2014). For this reason, a balanced proportion of verifications and elaborations may be more beneficial. Following Strijbos, Van Goozen, and Prins (2012), we will distinguish between positive, negative, and neutral verifications. This is in agreement with research that claims that feedback can be positive, negative, or neutral (Topping, Smith, Swanson, & Elliot, 2000). Although assessees are more happy with positive than with negative feedback (eg. Anseel & Lievens, 2006), previous research points out that both positive and negative feedback can have a major influence on learners' performance (Podsakoff & Farh, 1989), as it can lead to a rise or drop in effort and goal setting (e.g. Bandura & Cervone, 1986). Related to this, research revealed that praise improves motivation with low-performers, but not with high-performers (Mumm & Mutlu, 2011). When learners receive negative feedback, this could lead to "giving up", but as well to "trying harder". Similarly, when learners receive positive feedback, this could result in "sitting on their laurels", but as well in "doubling their efforts" (Van-Dijk & Kluger, 2004). This is in line with earlier research, which claims that both positive and negative feedback can have positive outcomes for students' learning (Kluger & DeNisi, 1996).

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