

Peer review of course content for the evaluation and improvement of university courses

Master thesis

Sanne K. Mirck (3935159)

Supervisors: Anne Khaled MSc and Dr Louise van de Venne

Date: 12-06-2014

Master Educational Design and Consultancy

Utrecht University

Abstract

Evaluating university courses is a challenging task. Next to student evaluations, the review of courses by knowledgeable colleagues (i.e., peer review) could be used as an evaluation instrument. Peer review has already been used for the accreditation of study programs and didactical purposes, but less for improving course content. Therefore, this qualitative study explores the potential of peer review for the evaluation and improvement of *course content*. Since the content of university courses depends on the expertise and interest of faculty staff, the input of peers from other universities could be a means to stimulate reflection and broaden the scope of faculty members. Ten interviews with faculty members of a Dutch university for life-sciences were conducted to identify crucial aspects for the effectuation of this type of peer review. The results show that the peer should have in-depth knowledge about the content of the course and the ability to oversee the developments in the respective field and educational sector to provide feedback on scientific depth, teaching methods, and whether a course is state of the art. All original course materials are useful for the review provided that they are supplemented with information about the study program and student population. The peer feedback can be used as input for changes in the course and reflection and discussion within chair groups. Finally, it is important to provide a clear institutional framework for the execution of peer review, since a more summative or formative focus influences the way the review should be organized.

Keywords: peer review, higher education, course content, quality assurance, professional learning.

Table of content

Introduction.....	3
Existing practices and research on peer review in universities.....	5
Conceptualizing peer review.....	6
Aspects of peer review.....	7
Research questions and contribution to the field.....	8
Methods.....	9
Design.....	9
Context.....	9
Participants.....	10
Instrument.....	11
Procedure.....	11
Analysis.....	12
Results.....	16
1) Selection of the peer.....	16
2) Issues addressed during the review.....	19
3) Materials for peer review.....	21
4) Using peer feedback.....	22
5) Institutional support.....	25
Conclusions and discussion.....	27
Limitations.....	29
Implications for further research.....	30
References.....	30
Appendix 1.....	34
Appendix 2.....	36

Introduction

Courses taught in higher education need to respond to the fast developments in both science and society. University's curricula are the result of ongoing negotiations between diverse stakeholders, including students, teachers, administrators, and workplace representatives (Harris, et al., 2010). These stakeholders have different opinions about what knowledge and skills should be taught in university and how this should be taught. This dynamic context creates challenges for evaluating the quality of university education. Evaluating courses is a crucial aspect of quality assurance, but most universities still lack sufficient instruments to do so (Harris, et al., 2010). An instrument that is commonly used around the world is student evaluations in the form of a questionnaire (Freeman & Dobbins, 2013; Harris, et al., 2010; Nygaard & Belluigi, 2011). These standardized questionnaires give an impression of students' perceptions regarding the course and the quality of teaching. Student questionnaires are an attractive instrument for universities because it is a timesaving and relatively cheap method for evaluating university courses. Faculty members generally experience student questionnaires as useful; especially those items that provide feedback on student-teacher interaction, grading practices, instruction, and to a lesser extent items about structural issues of the course (Schmelkin, Spencer, & Gellman, 1997). Even though students might be good assessors of instructional skills, they are not able to judge the whole spectrum of teaching effectiveness (Malik, 1996). Aspects, such as "disciplinary competence, contemporaneity of materials, or relevance to related disciplines" are difficult for students to evaluate (Malik, 1996, p. 277). The main problem with evaluation through student questionnaires is that the collected data are not complemented with data from other sources, which makes it a challenge to trace the exact reason for negative feedback and points for improvement (Nygaard & Belluigi, 2011).

Peer review among university staff is a potential instrument to strengthen the evaluation system (Rudd, Hoover, Connor, & Baker, 2001). Especially for the quality of course content it could be interesting to use peer review (Malik, 1996). In most universities the faculty members are responsible for the design of university courses. These faculty members are influenced by scientific societies, education committees, and corporate staff, but still have large degree of freedom in the content and methods they choose to use. Faculty members are researchers specialized in the topics of the courses they teach, which means that the content of these courses highly depend on their interests and expertise. The input of knowledgeable colleagues from other universities could be a mean to broaden the scope of faculty members, let them reflect on the courses they develop, and thereby improve the quality of university courses (Malik, 1996). There is a lot of research available on how peer review can be used to evaluate and improve didactic quality at the course level (Kumrow & Dahlen, 2002; Lomas & Nicholls, 2005). However, this type of peer review focuses on *didactics* and not on the *content* of courses. There is also research that elaborates on the use of peer review during accreditation procedures, which involves curricula content, but this brand of research focuses on study programs as a whole (Harvey & Newton, 2004). Accreditation committees usually do not look into the details of *single courses* (Jeliazkova, 2002).

The aim of this study was to explore the potential of peer review for the evaluation and improvement of *course content*. Because there is very little known about the process of peer review of course content, the first step was to find out what this process should look like for faculty members to be able to use and learn from peer evaluation information. By interviewing faculty members who use peer review at Wageningen University in The Netherlands, this study provides an opportunity to identify the aspects that are crucial for the effectuation of peer review.

Existing practices and research on peer review in universities

Peer review is commonly practiced in Dutch Universities if it concerns the national quality assurance procedure. Expert or peer committees evaluate clusters of similar bachelor and master programs (Jeliazkova, 2002). Despite the fact that this type of peer review focuses on the program level, developments concerning quality assurance can be relevant for the process of peer review at the course level. Amaral and Rosa (2010) suggest that the raising costs of quality assurance through accreditation organizations might lead to increased initiatives in developing own institutional schemes for quality assurance. Moreover, lessons learned in the field of curricular peer review might also apply to the peer review of course content. Jeliazkova (2002) found, for example, that accreditation recommendations are often not put into practice because staff members have a different view on the program's goal and educational philosophy than the review committee. This suggests that it might be important to assure an initial level of agreement among peers about the course's goals and educational philosophy when reviewing course content. Aelterman's (2006) research on accreditation agencies concludes that a certain degree of freedom in reviewing practices is desirable, because it allows the reviewer to focus on the issues that have highest concern. Applied to the peer review of course content this suggests that review procedures should not be too strictly defined.

A second brand of research that is important to explore for this study focuses on the peer review of teaching. Studies from this field have shown the importance of teacher participation in the development of peer review formats or procedures (Darling-Hammond & Richardson, 2009). Lomas and Nicholls (2005) conclude that peer review of teaching is more likely to be accepted when the feedback provided by peers has a developmental rather than judgmental focus, when

there is training provided to develop reviewing skills, and when the responsibility for the design and implementation of the process is located at the departmental level.

Another field in which literature about peer review can be found is human resource management. In this field peer review is used as an evaluation tool for formative purposes in, for example, leadership development programs (Gibson, 2008). It has also been used for the summative evaluation of the performance of post-tenure university staff and to make promotion decisions (Mignon & Langsam, 1999; Swiskes, 1999).

Conceptualizing peer review

There are several concepts used in the literature that are related to peer review. A term commonly used in the field of teaching is instructional consultation, which is defined by Lenze (1996) as “the provision of an outside, unbiased perspective on a faculty member’s teaching” (in Hicks, 1999, p.9). This outside perspective is usually provided by an expert faculty developer, which distinguishes instructional consultation from peer consultation. In the case of course content review, it is a colleague from a different university who offers the outside perspective. This is why the term *peer* has been chosen.

Instead of adopting the term peer consultation, consultation has been replaced by *review*. Consultation is often used in prescriptive processes where a consultant identifies problems and prescribes solutions for those problems (Hicks, 1999). However, the process of peer review has a collaborative nature and the peer is a facilitator of change. “A key element of peer review is that both the reviewer and the person under review have similar levels of knowledge and expertise about the subject being taught and the art of teaching” (Kumrow & Dahlen, 2002, p.238).

Peer review is also closely connected to the words feedback and evaluation. Review relates to evaluation as a means to an end. Reviewing is an interactional process that results in, or

contributes to, the evaluation of course content. A part of this interactional review process is the provision of constructive feedback for improvement (Kumrow & Dahlen, 2002).

Aspects of peer review

Having defined peer review as a process, it is important to elaborate on the different aspects that are included in this process. Malik's (1996) pioneering research focuses on four categories: (1) the selection of the peer; (2) the issues addressed during the reviewing process; (3) the materials used for the review; and (4) the use of the results by the review recipient. These four categories show quite some similarities with the elements on which Hicks (1999) built his conceptual framework for the analysis of instructional consultation: access, focus, recognition, and outcomes. Unfortunately, Malik (1996) has not mapped his categories in great detail. Nevertheless, the existing studies on peer review in other fields offer the possibility to fill in some blanks. The selection of the peer (1) is, for example, related to the observation of Rudd, Hoover, Connor and Baker (2001) that peers can be reluctant to provide else than positive feedback, depending on their relation with the recipient, and Huston & Weaver (2007) explain how to tailor a feedback process in order to evaluate important issues (2). Quinlan (1996) offers suggestions for the type of materials that should be used as a starting point for interaction (3) and Jeliaskova (2002) investigated the barriers for a smooth implementation of review results (4).

Because Malik (1996) specifically focused on peer review of course content his four categories have been used to define the research questions of this study. It is thereby important to recognize that Malik's (1996) study was conducted more than 15 years ago and that since then higher education has changed rapidly. New types of university governance have been introduced and new technologies dominate the classrooms (Harvey & Newton, 2004). For this reason,

Malik's (1996) work was only used as a framework of reference, and empirical data will be collected to deepen the knowledge about peer review of course content.

Research questions and contribution to the field

This study aimed to provide an answer to the question: *How can peer review be used to evaluate and improve the content and teaching quality of university courses?* In order to provide an answer to this question the following sub-questions were investigated:

1. How do faculty members select peers for the reviewing procedure and what are their motivations for this selection procedure?
2. Which issues or questions should the peer(s) address in order to contribute to quality improvement of the course content and teaching?
3. What materials should be used for the review procedure (from a faculty staff perspective)?
4. How do faculty members use the feedback they receive from peers to improve their courses?

Based on the results of this research, universities will be able to give their faculty staff a set of practical guidelines for how to put peer review in practice, which should result in better quality courses. Furthermore, this study contributes to filling the scientific gap that Malik (1996) already identified more than 15 years ago and the findings can be used as a basic document for further research on the causal relationships between (aspects of) peer review and the quality of education, for example measured through student results.

Methods

Design

This research intended to investigate the experiences of faculty members with peer review of course content and to identify aspects that are important for effective use of peer review by these faculty members. The explorative character of this study and its focus on experiences ask for a descriptive approach. This study employs a qualitative design which keeps the number of participants limited but offers the opportunity to thoroughly elaborate on the individual experiences of the participants (Hart 't, Boeije, & Hox, 2007). Data were collected by means of semi-structured interviews.

Context

In September 2008, all chair holders of a university for the life-sciences in the Netherlands were requested by the Education Institute to plan and carry out peer reviews of their courses. These should take place every five years and results should be discussed during the annual management interviews. A format was developed to guide the focus of the peer review, which mainly concerned the academic level of courses. The staff members who are responsible for a course were requested to develop a course portfolio to send to their peers. These peers had to be colleagues in Dutch or international universities who are experts in the theme of the course. The portfolio is a reflective investigation on how course structures, teaching techniques, and assessment strategies enhance student learning and should include a selection of the study materials. The university subject of research aims at having 50 percent of its courses peer reviewed by 2016. This percentage has been included as a goal in the profile and performance agreement with the Dutch Ministry of Economics, Agriculture and Innovation.

Participants

For this study, one group interview and nine individual interviews were conducted, which resulted in a total of ten interviews and eleven participants. The group interview was organized with two participants who had organized a peer review in close cooperation. The instrument and procedure of this interview did not differ from the individual interviews. The first step in the sampling procedure was to identify peer review users. The users were found through two different ways. First, all users that were known by the Education Institute were approached by the director of this institute. This resulted in a selection of seven participants. The other four participants were selected through snowball sampling, whereby early participants came up with names of other users. The only selection criteria employed was maximal variation, to make sure that users from all different life-science domains of the university were represented in the sample. These domains include animal sciences, environmental sciences, food sciences, plant sciences, and social sciences. Courses in different domains use different instructional methods, e.g., lectures in the social sciences and lab practices in the plant sciences, which might influence the experiences with peer review. Only in the domain of plant sciences no users were found. All participants had an important role in the organization of the peer review of their chair group. The final sample included three chair holders, five teaching coordinators at the level of the chair group and three course coordinators (see Table 1). Among the participants are two women and nine men.

Table 1

Overview Participants

Science group	Function
Food sciences	Chair holder ($n=1$); Teaching coordinator ($n=1$)
Animal sciences	Chair holder ($n=1$); Teaching coordinator ($n=1$); Course coordinator ($n=1$)
Social sciences	Chair holder ($n=1$); Teaching coordinator ($n=2$); Course coordinator ($n=1$)
Environmental sciences	Teaching coordinator ($n=1$); Course coordinator ($n=1$)

Instrument

The semi-structured interview was selected as the primary method for the data collection. More openly designed interviews increase the chances for participants to open up and freely express their viewpoints, compared to standardized interviews (Flick, 2006). The basic instrument used is an interview guide, which is commonly used for semi-structured interviews (Hart et al., 2007). An interview guide as described by Witzel (2000) includes general questions that are initially based on literature review. In this study, the interview guide consisted of four parts that each related to one of the sub-questions presented in the introduction. Part one focused on the selection of peers and included questions about the selection criteria and the relationship between peers. Part two was about the focal point of the review process and included questions about the structure of the review process and the questions asked to the peers. Part three focused on the materials that are used in the reviewing procedure. The final part was about the use of peer review results by staff members and included questions about the interpretation of results and the way feedback is translated into actions. The interview guide was tested during a pilot interview with a staff member of the university subject to study. The complete interview guide has been included in Appendix 1.

Procedure

The first author conducted all ten interviews in March and April 2014. The interviews were in Dutch and took place in the office of the participant or a university room that was available. The interviews lasted approximately 40 to 60 minutes and were audio recorded by the first author. The audio material was transcribed.

Analysis

The analysis of the transcribed interview text was based on the framework of qualitative content analysis and consisted of five steps (Flick, 2006). The first step toward analyzing the data has been to select only those parts of the texts that were relevant for answering the research questions. Parts of the conversation that were about practical aspects of the interview or included in-depth explanation about the content of a course were, for example, removed. Afterwards, the remaining material was paraphrased. The goal of paraphrasing is to reduce the material without losing essential information (Schilling, 2006). The process of paraphrasing resulted in a short and information rich set of data. To show the difference between raw and paraphrased data an example can be found in Table 2. The paraphrased data were loaded into NVivo, a software program that was used for coding the data.

Table 2

Example of Paraphrasing Data

Original	Paraphrases
At a group level not, but at a course level surely, I think. I have myself.. I wouldn't remember what.. but for me it was useful. I have broadened the scope of the literature; there was quite a lot of literature from Wageningen. One of the advices was why don't you make the literature a bit broader in order to make people able to discover how they write about these themes in different places. Well, that was in line with the story of students.. you are receiving feedback from multiple sides. But there is not.. uh.. at a group level.. a general conclusion that could be filtered from the review.	At a group level not. At a course level surely. I have broadened the scope of the literature. There was quite a lot of literature from Wageningen. That was one of the advices. In order to make people able to discover how they write about these themes in different places. The advice was in line with the story of students. We receive feedback from multiple sides.

Note. The original text has been translated from Dutch to English.

In this study, we used a combination of a deductive and indicative coding approach, which is typical for qualitative content analysis (Flick, 2006). The second step toward analyzing data was to develop a preliminary coding system by using a deductive approach. The four sub-

questions of this study were used to determine major themes. These are 1) the selection of the peer, 2) the issues addressed during the review, 3) the materials used for the review, and 4) the use of the results by the recipient. Next, the literature presented in the introduction was used to identify important elements (below referred to as labels) within each of the themes. An example of an element or label that was identified within the theme *selection peer* (sub-question one) is *enthusiasm*. This is based on the findings of Cox (2004) that in faculty learning communities people ask usually feedback from a colleague of whom they think that he or she would be enthusiastic to give feedback. The themes and elements together constituted a preliminary coding system, which is partly presented in Table 3 and based on literature.

Table 3

Example of the Preliminary Coding System

Theme	Label	Source
Selection peer	Research	Handal (1999)
	Overview field	Malik (1996)
	Specialist theme of the course	Handal (1999)
	Role as a teacher	Handal (1999); Malik (1996)
	Enthousiasm	Cox (2004)
	Willingness	Cox (2004)
	Location	Hicks (1999)

The third step was to complete the preliminary coding system by using an inductive approach. To do so, all data were divided into fragments and assigned to one or more of the themes in the preliminary coding system. Soon, it became apparent that the data included some challenges that were not directly related to one of the themes mentioned above, but were relevant for answering the main research question. It was therefore decided to inductively develop a fifth theme, namely *institutional support* and add this to the preliminary coding system. Afterwards we selected the data per theme, one by one, and divided them into smaller fragments. Each fragment was labeled with a label of the preliminary coding system. For some fragments there were no suitable label available in the preliminary coding system; therefore, open coding

techniques were applied by adding a new label to the coding system. The new labels were thus inductively developed and integrated with the deductively developed labels in the final coding system. The complete coding system including definitions can be found in Appendix 2.

The fourth step of the analysis entailed the actual coding of the data in Nvivo. This was done by the first author on the level of the labels. To improve reliability, all labels were provided with a working definition. The label *role in other education processes* has for example the working definition *the peer has been chosen based on his or her participation in activities related to education other than teaching courses, think about work in program committees, etc.* An independent researcher was asked to also code a randomly selected sample, including 10% of the data (43 fragments) to check the inter-rater reliability (Schilling, 2006). The Cohen's Kappa was .78, which is above the .70 acceptance rate (Lombard, Snyder-Duch, & Bracken, 2002).

In order to answer the research questions the fifth and final step was to identify patterns based on the coded data. These patterns were found through a structuring process whereby labels were clustered together. All clusters are shown in Table 4.

Table 4

Main Analysis Through Coding System

Theme	Cluster	Labels
Selection peer (RQ 1)	Qualities related to content and science	Publications
		Research
		Overview field
		Specialist theme of the course
		Shared vision on the field
	Qualities related to education	Role as a teacher
		Role in other educational activities
		Works in similar institution
		Works with a similar student population
	Pragmatic criteria	Location
		Language
	Relation with peer	Independence
		Enthousiasm
Willingness		
Estimating expertise peer		

Issues addressed (RQ 2)	Content focus	Up to date Scientific depth Structure course Structure course set Preparation as a professional Choice of themes Gaps Level Choice literature
	Didactic focus	Learning and teaching methods Didactical skills teacher Relevance
	Selection course(s)	Single course Set courses
Materials (RQ 3)	Original materials	Literature and assignments Interaction student-teacher Student products Information learning goals Access online education material Exams
	Background materials	Feedback students Information student population Informatie programme/field Self-diagnose Information education system Meeting with teachers
Use feedback (RQ 4)	Use feedback	Reflection and discussion in the chair group Changes in course
	Reasons use	Input for ongoing discussion Eye openers Confirmation
	Reasons non-use	Disagreement with proposed change Lack of time/money/personnel Misconception Beyond control chair group Closed attitude receiver Little feedback provided
	Effect on quality course	Positive effect Negative effect No effect
Institutional support	Type of use	Formative use Summative use
	Support	Motivational support and feedback university Financial support Less top down decision making Workload
Alternatives peer review		Chair visitation Review at conferences Rotate teachers Review within chair group Review only when there is a problem Students assistants Peer from outside the field

Background information	Timing	Date review
		Cycle
		Number of day parts used for review
	Responsibility	Responsibility teacher
		Responsibility chair group
	Reward peer	Gift
		Payment

Results

1) Selection of the peer

The university staff members expressed a high sense of responsibility for the courses they teach and in particular the courses that were peer reviewed. Therefore, the selection of a peer was everything but a random process whereby the staff used several criteria. These criteria can be divided into three categories: (1) the peers' scientific expertise in the field; (2) the peers' educational expertise; and (3) pragmatic criteria.

All 11 participants chose a peer whom they considered an expert or *specialist in the topic* of the course of interest. In some cases a team of peers was asked to review multiple courses and people with complementary expertise were selected in order to cover all topics in the course set. The judgment on the peers' expertise has been based on a wide set of information and sources. Six participants mentioned they knew that the peer taught a similar course in their home institute. Next to that, they knew the peer was a renowned researcher based on his or her publications, collaboration between the participant and peer in research projects or the performance of the peer as opponent in PhD defenses. Despite the fact that the peer should be a specialist on the theme of the course, almost all participants emphasized that a peer should look at the course from a broader perspective. Peers should, therefore, be able to take a *helicopter view*; they should know what is going on in related fields, in society, and in institutions of higher education. Since the scientific world is highly competitive, two participants mentioned that they would not ask their direct rivals for the peer review or someone with a completely different perspective on the field.

Next to being a good researcher, eight participants mentioned the educational expertise of the peer as an important selection criterion. Besides *teaching similar courses*, the participants looked for other signs of educational expertise. One participant chose peers who worked with a comparable student population and two participants looked at the way peers guided MSc and PhD students at their home institutes. Another important signal for educational expertise was the peers' role in setting up education structures or innovation. Among the peers were a former dean, a director of a graduate school, and a director of an education institute. In five cases the peers were specifically selected because they worked in a *similar institute* or because they were familiar with the Dutch or European education system.

Among the pragmatic selection criteria were language and location. In case the official language of a course was Dutch it was important to select a Dutch-speaking peer. Five participants approached a peer who was already visiting the university for a congress, sabbatical or PhD defense. This would improve the peer review efficiency since no extra time or money was needed for traveling, the materials for the review could be handed to the peer directly and additional explanation from the side of the staff members could be given orally.

The first step toward the selection of a peer has in all cases been to explore ones professional network in search for a suitable candidate. A certain degree of acquaintance was important for the university staff for three reasons. First of all, familiarity with the peer made the university staff able to judge the peers' competencies as a reviewer for which the criteria have been described above. Secondly, many participants emphasized that the peer review is a lot of work, so they wouldn't be comfortable to ask an unknown person for such a favor. Thirdly, the relation with the peer enables the university staff to estimate the peers' interest and enthusiasm for carrying out a peer review. The relation between the university staff and the peers they

selected is nevertheless not undisputed. Many participants mentioned that they had taken precautions to enable the peer to take an independent position. Two chair holders selected for example a peer for their teaching staff instead of delegating the responsibility for the selection to individual teachers. Two participants approached an acquainted chair group and asked them to nominate a peer that was unknown to the university staff. In the end a few peers worked within the same university or the Netherlands, but the majority came from institutions abroad. Despite of these precautions some participants explicitly expressed their concerns about the quality of the peer review because of a lack of independency. These concerns seem to be related to the function different participants attribute to the peer review. In case the reviews would be used for summative purposes there would be an incentive for staff members to push for a positive review. The different functions of the peer review are discussed in more detail in section five (institutional support).

In sum, for the selection of the peer it was important to find someone with both scientific and educational experience; someone who had sufficient in depth knowledge about the content of the course, but at the same time was able to oversee the developments in both the field and the educational sector. The most important characteristics of a peer are summarized in Table 6. This table also presents other important determents for a successful peer review, which are explained in the next sections.

Table 6

Summary of Important Characteristics for Peer Review of Course Content (N=11)

Theme	Important characteristics for peer review	Proof
Selection peer	Specialist on course theme	Used in all cases
	Role as a teacher	Used in 8 cases
	Overview field	Used in 8 cases
	Works in similar institutional setting	Used in 5 cases

Issues addressed	Up to date	Used in all cases
	Teaching and learning methods	Used in 8 cases
	Gaps	Used in 7 cases
	Level and scientific depth	Used in 7 cases
	Choice topics	Used in 5 cases
Materials	Literature, assignments and exams	Used in all cases
	Information study programme	Used in 9 cases
	Information learning goals	Used in 8 cases
	Products students	Used in 8 cases
	Information student population	Used in 7 cases
Use	Changes in course	Used in 8 cases
	Reflection in chair group	Used in 8 cases
	Input for ongoing discussion	Used in 6 cases
Institutional support	Motivational support and feedback	Used in 4 cases
	Financial support	Used in 4 cases
	Less top down decision making	Used in 3 cases

2) Issues addressed during the review

Among the peer review experiences investigated in this study there were two different approaches found. The first approach focused on a set of courses that were all reviewed by the same peer. The second approach focused on only one course or on a set of course, but with a different reviewer for every course. Six participants chose the first approach and five the second. Participants who chose the first approach had done this consciously in order to get feedback on the coherence between courses and the structure and sequence of courses. Two participants explained that this made the reviewing task more challenging and rewarding for the peer and that they would not have been able to get high quality professionals for reviewing only a single course. Participants that chose to ask a peer for one particular course explained that this approach enabled the peer to give in-depth feedback. In case the review focused on one course, this was usually the responsibility of the course coordinator. In the other cases the peer review was the shared responsibility of the chair group.

All 11 participants guided their peers through the review process by means of a more or less structured format. These formats entailed questions for the peer or explained what the peer should look at. The majority of questions concerned the content of the course, but most

participants also included questions about teaching methodology and other didactical issues. The most frequently asked question to peers (all ten cases) was whether a course was up to date and *state of the art* in the relevant discipline. For basic courses at the BSc level this question was considered less relevant, because these courses usually do not deal with the newest developments in science. Seven participants asked the peers whether there were *gaps* in the course curriculum, or whether important topics were underrepresented. The peers also focused on the *choice of themes* or topics (five cases) and literature (three cases) and the structure and coherence of the course (three cases). Other frequently asked questions concerned the general level of the course in terms of *scientific depth* or challenging a specific student population. Three reviews also reflected on the relevance of the course content for the professional development of students and labor market demands.

If the review included feedback on the teaching methodology and other didactical issues, it mainly concerned the *balance between different teaching methods* and the alignment of teaching methods and examination with the learning goals. Respondents from all represented domains mentioned the balance between- and suitability of teaching methods. The didactical qualities of teachers were not reviewed. According to most participants this was not part of the objectives of the peer review, as students already provided feedback on this topic through the student questionnaire. The focus that was chosen for the peer review partly determined the profile of the desired peer. The emphasis on content motivated the selection of content specialists. One participant nevertheless mentioned that he or she would be very interested to carry out a peer review with a peer who works in a completely difficult field to explicitly focus on teaching methods and get new ideas.

To conclude, the added value of a peer review in comparison with a student questionnaire was that peers could provide feedback on whether a course was state of the art in the relevant discipline, the choice of topics, literature and teaching methods in relation to learning goals, the structure and coherence of the course (also in relation to the programme) and its scientific depth.

3) Materials for peer review

University staff openly shared their course materials and provided the peers with everything they requested for the review. All participants explicitly stated that they provided the study guide, which includes the core information about a course including *learning goals*, teaching methods, literature, and planning. Next to that, all staff gave or sent *books, readers, student assignments* and *exams* including a rubric, and (sometimes) success rates. Four staff members provided the peers with access to blackboard in order to review online materials, but two others experienced the need to arrange permission at the central ICT office as an obstacle to do so. In half of the cases, also *products made by students* were shared with the peer, including MSc theses, internship reports, laboratory reports, and student answers to exam questions. These products were randomly selected or a sample was composed of high and low graded examples. Participants expected that by reviewing student products the peer would be able to estimate whether the course was taught at the right level and whether the learning goals were achieved. Considered the fact that the participants did not regard reviewing didactic skills as a part of the peer review, it is not surprising that none of the peers attended lectures and only a few watched video materials that entailed teacher-student interaction.

Next to these original materials that are a direct input or output of the course, the peers were also provided with a lot of background information. All participants emphasized that it was crucial to give *information about the study program* in which the course was situated. The peer

should receive information about the objectives of the study program, the position of the course in the program and about the *student population* and their prerequisite knowledge. In one case the absence of such information led to unusable feedback because the feedback was based on misconceptions. Peers would, for example, give advice to add a certain topic to a course, while in fact this topic was included in another course of the same study program. Five participants went one step further and explained the wider institutional context of the course, including information about the organizational structure of the university, grading and credit system, planning and duration of courses, and work of program committees. If peers visited the university, there were usually a couple of hours reserved to talk to teachers or the course coordinator. Most peer review visits lasted two days, with an average of half a day to a day per course. In two cases the peers also interviewed a group of students. This had been organized to enable the peer to hear multiple perspectives on the course(s). In the other cases the student perspective was presented to the peer by means of the results of the student questionnaire.

It can be concluded that all original materials of the course were useful for the review. Information about learning goals, teaching methods, literature and randomly selected student products formed the backbone of these materials. Next to these original materials it was crucial to provide the peer with background information about the study program and the student population.

4) Using peer feedback

The feedback that resulted from the peer review procedure has been used in two different ways. The first is the *straightforward implementation* of the peers' advice, leading to actual change in the course(s). Table 5 shows several examples of these changes, in relation to the issues addressed in the peer review that have been presented above (section 2). Since some peer

reviews had taken place shortly before the interview some participants had not yet implemented any change. The second way feedback was used by university staff was more indirectly through *reflection and discussion within chair groups* and sometimes also within program committees. Often this preceded the implementation of actual change. Seven chair groups organized meetings with their teaching staff to discuss the review outcomes, in one case even with the peer present to explain his or her advices. Aim of these meetings was to define action points, reflect on personal learning and draw lessons from the review of individual courses for the chair group as a whole.

Table 5

Examples of Changes in Courses and Focus of the Peer Review

Change	Issues addressed
“We introduced a new teaching team to the course, which is currently rewriting the reader since the old one dated from 2006.”	Up to date; choice literature
“The topic that used to be discussed in the final week of the course was changed in order to let all pieces fit together.”	Structure and coherence course; choice topic
“We looked for ways to strengthen the teaching of basic practical skills in the program.”	Structure and coherence program
“Students used to review a scientific paper, but this was too challenging for them. Now they get a group assignment in which they can apply the research methods that we teach in the course.”	Teaching methods; level and scientific depth
“Well, we decided to give students the chance to visit a company and give more real life examples.”	Teaching methods; relevance to future career

Note. The original text has been translated from Dutch to English.

For different reasons not all of the feedback from peers was used to generate change. As has been said before, some feedback was based on misconceptions on the side of the peer due to incomplete information provision. Four participants stated that advices were rejected because they did not fit the general vision on education within the chair group or university as a whole or

the course coordinator did simply not agree with the opinion of the peer. Two participants emphasized that the peers' opinion is only one opinion and that, therefore, not all feedback holds the truth. Moreover, two participants mentioned that teachers who feel responsible for the courses they teach sometimes show a defensive attitude and not all participants found it easy to show their vulnerabilities to a peer. In two cases the feedback that did not lead to change was about things that did not belong to the span of control of the course coordinator of the chair group. Peers identified for example gaps in a program, which is the responsibility of the program committee. These kinds of problems were in one case solved very creatively by a chair group through developing new electives or even a minor program. In the other case staff tried to get these kinds of problems on the agenda of a program committee, program director, or the Education Institute.

The peer review led only in a few cases to new insights or eye openers. In general most courses were very positively reviewed and without a lot of points for improvement no big changes were made. Some participants thought that the poor harvest in terms of opportunity for improvement might be related to the general level of the questions that were described in section two (issues addressed during the review). In three cases staff members explicitly drew the attention of the peers to very specific issues, like problems in the course(s) or ongoing discussions among the teaching staff. In one chair group the teaching staff carried out an analysis of the existing strengths, weaknesses, opportunities and threats of the course. This self-diagnose led to valuable input of the peer in ongoing discussions.

Seen the lack of rigorous changes, it is not surprising that very few participants experienced an effect of the review in terms of student performance or student appreciation. Despite the limited effect the participants described the review as valuable for the prevention of

tunnel vision and more importantly, to get confirmation about the quality of the course. In sum, the feedback that resulted from the peer review procedure has been used directly through implementation of the peers' advice and indirectly through reflection and discussion within chair groups. Not all peer feedback was used to generate change, mainly because it was based on misconceptions, did not belong to the span of control of the chair group, or because the university staff did not agree with the proposal for improvement.

5) Institutional support

Malik's (1996) framework included four major foci; however, our data showed that there is a fifth theme that is essential for making peer review a success: institutional support. Institutional support includes financial and motivational support, as well as a clear framework regarding ownership and the function of peer review from the side of the university. In the university at stake here, the responsibility of the peer reviews, including its *financial burden*, was assigned to the chair groups. The data show that chair groups compensated at least the expenses of their peers. Several peers also received a financial compensation or gift for the reviewing itself. This financial construction stimulated an efficient organization of the peer review, but participants have pointed out that it could also be an incentive to arrange a peer that is cheap, for example because he or she is already visiting, rather than a peer that is good. Participants also mentioned they missed motivational support and practical help. All participants used the university's format with questions for the peer, but three people mentioned they missed *feedback* when they sent the filled in forms to the education institute. This feedback could have included information on how to improve the peer review process and lessons learned at an institutional level. Moreover, two participants pointed out that if the peer review included advice about a whole study program or any other issue that was not controlled by the chair group, there were no

clear channels to bring these advices further. Some participants mentioned that the general workload of both themselves and the peers was so high that it was really hard to create enough time for the execution of the peer review.

Much of the discontentment about the institutional support was related to ambiguities regarding *ownership* and the *summative or formative use* of the peer review. Even though the organization of peer review was decentralized, three participants describe the peer review as something that was top-down implemented and imposed on them. This perception has been influenced by the university's decision to include the peer review in the profile and performance agreements with the Ministry. Since the university's future budget will depend on its compliance to these agreements university staff members felt pressured to organize a peer review. As a result they perceived the peer review less as an opportunity to learn and improve their courses, and more as an obligatory task that is yet another part of the university's bureaucracy. Four staff members mentioned that the lack of focus on personal learning was also influenced by haziness about whether the peer review would be used for summative purposes, for example in the university's tenure track or for assigning bonuses. The peer review was initially introduced as a formative system and in this way very much appreciated by the staff. The fact that some participants were very concerned about the lack of independency of peers nevertheless showed that they looked at it from a summative perspective.

To conclude, peer review could be strengthened by the university through providing motivational and financial support as well as a clear institutional framework regarding the summative or formative use of review results.

Conclusions and discussion

The aim of this study was to contribute to the scientific gap identified by Malik (1996) and simultaneously provides universities and especially faculty staff with hands-on information about how to organize a peer review. In order to do so we attempted to answer the question “*How can peer review be used to evaluate and improve the content and teaching quality of university courses?*” The findings, deducted from interviews with eleven university staff members, show that the peer should have both scientific and educational expertise to provide feedback on aspects like scientific depth, teaching methods, and whether a course is state of the art. All original course materials, supplemented with information about the study program and student population, should be provided for review. The peer feedback can be used as input for changes in the course and for reflection and discussion within chair groups. Finally, a clear institutional framework is essential for the execution of peer review, since a more summative or formative focus influences the way the review should be organized.

There are two striking issues that deserve further consideration. First of all, our data fail to provide a conclusive answer to the question whether it is problematic if the peer is not fully independent. University staff told that acquaintance with the peer is important to be able to judge the peers’ competencies as a reviewer, to feel comfortable to ask the peer for a favor and to estimate the peers’ interest and enthusiasm for carrying out a peer review. Others seriously questioned the value of the peer review because acquainted peers would bequeath to provide critical feedback and university staff could use this strategically to create the impression that their education is excellent. Supporting the need for independency, Malik (1996) advised not to use peer from the same department or institute because they “may have a conflicts of interest or biases (...) as well as a desire to avoid internal criticism and concerns about reciprocity in their

own reviews". (Malik, 1996, p. 280). This might also count for a colleague from a different institute with whom one cooperates on a regular basis. On the other hand, trusting a peer's expertise and mutual respect have been identified as necessary conditions for the development of Faculty Learning Communities, which undermine the need of independent peers (Cox, 2004; Darling-Hammond & Richardson, 2009). Further research is needed to identify the appropriate 'distance' between the teacher and the reviewer of course content. It is likely that this will depend on whether the peer review is used as a formative or summative instrument. The expressed needs of university staff lean more toward the use of peer review as a formative instrument, whereby the peer can be a professional acquaintance since the review is primarily a means for professional learning.

Secondly, it is striking that the amount of feedback that generated change was generally small. To increase the chances of receiving input that is perceived as useful by the university staff a self-diagnose could be provided to the peer. Literature on instructional consultation shows that it is critical for feedback recipients to be proactive in setting the agenda for consultation (Hicks, 1999). Huston and Weaver (2008) state that experienced university staff is very well able of a sophisticated problem analysis that leads to a focus on specific aspects or problems. On the other hand, some participants expressed great appreciation of the fact that peers came with unexpected feedback that led to new insights. The use of self-analysis could decrease the chances of such original feedback to occur. Weighing the advantages and disadvantages, we would recommend including a self-diagnoses in the set of materials used for the review. Since the success of peer review for the improvement of courses is dependent on the motivation of university staff, it is important that the feedback of the peer matches the needs of the staff.

Moreover, making a self-analysis stimulates university staff to already critically look at their course before the peer review even has started.

Limitations

Based on the current study it can be stated that there is need for amplifying the knowledge about peer review of course content. A limitation of this study is that all data were collected from only one institution, specialized in life sciences. Universities with a different focus probably need to adjust the peer review process to fit their institutional needs. In business schools, for example, it might be more important that the peer has business experience, rather than scientific expertise. Moreover, the peer review practices used in this study have been shaped by the initial policy and guidelines of the university's Education Institute. This implies that there might be many alternatives for organizing peer reviews, which are not part of the current study. A participant in this study suggested, for example, to organize the peer review through education sessions at scientific conferences. This would be very time efficient and teachers could receive feedback from multiple peers at ones. Other ways of organizing peer feedback are worth further investigation through scientific research.

Furthermore it is important to emphasize that the sample used in this study might have been biased due to the sampling method. Because most participants were contacted through the Education Institute it is probable that these people are generally more active within the university and involved with education quality than their average colleague. Moreover, not all courses in the university had been reviewed at the time of data collection. It is therefore likely that the sample includes people who have a more than average motivation for the peer review, since they belong to the group of early adapters of this evaluation method.

Implications for further research

Despite of its limitations, this study has contributed to explore the potential of peer review as an evaluation instrument and has shown the need for expanding Malik's (1996) framework by including institutional support. During the last two decades, the need for a strong institutional framework has become more important. Harvey and Newton (2004) made the observation that there is increasing inaudibility about quality evaluation and accountability in higher education. "The rhetoric and documentary preambles in many countries refer to quality evaluation as a process of improvement, yet all the emphases are on accountability, compliance and, in some cases, control of the sector" (Harvey & Newton, 2004, p. 151). This international trend is reflected in the way judgment and learning is combined in the current peer review process at the university subject to this study, which has led to insecurity among the staff about how they should organize a peer review. Therefore, both scientists at practitioners in the field should not stop searching for the right balance between evaluation methods in higher education and their integration into a solid system for quality assurance.

References

- Aelterman, G. (2006). Sets of Standards for External Quality Assurance Agencies: A comparison. *Quality in Higher Education*, 12(3), 227-233, DOI: 10.1080/13538320601050996.
- Amaral, A., & Rosa, M.J.(2010). Recent Trends in Quality Assurance. *Quality in Higher Education*, 16(1), 59-61, DOI: 10.1080/13538321003679515.
- Cox, M.D. (2004). Introduction to Faculty Learning Communities. *New Directions for Teaching and Learning*, 97, 5-23.

- Darling-Hammond, L., & Richardson, N. (2009). Teacher Learning: What Matters? *How teachers learn*, 66(5), 46-53.
- Flick, U. (2006). *An introduction to qualitative research*. London, Great Britain: SAGE.
- Freeman, R., & Dobbins, K. (2013). Are we serious about enhancing courses? Using the principles of assessment for learning to enhance course evaluation. *Assessment & Evaluation in Higher Education*, 38(2), 142–151, DOI: 10.1080/02602938.2011.611589.
- Gibson, S.K. (2008). The Developmental Relationships of Women Leaders in Career Transition: Implications for Leader Development. *Advances in Developing Human Resources*, 10(5), 651-670, DOI: 10.1177/1523422308323935.
- Handal, G. (1999). Consultation using critical friends. *New Directions for Teaching and Learning*, 79, 59-70.
- Harris, L., Driscoll, P., Lewis, M., Matthews, L., Russell, C., & Cumming, S. (2010). Implementing curriculum evaluation: case study of a generic undergraduate degree in health sciences. *Assessment & Evaluation in Higher Education*, 35(4), 477–490, DOI: 10.1080/02602930902862883.
- Hart, H. t', Boeije, H., & Hox, J. (2007). *Onderzoeksmethoden*. Amsterdam, Nederland: Boom onderwijs.
- Harvey, L., & Newton, J. (2004). Transforming Quality Evaluation. *Quality in Higher Education*, 10(2), 149-165.
- Huston, T., & Weaver, C.L. (2008). Peer Coaching: Professional Development for Experienced Faculty. *Innovative Higher Education*, 33, 5-20.
- Jeliazkova, M. (2002). Running the Maze: Interpreting external review recommendations. *Quality in Higher Education*, 8(1), 89-96, DOI: 10.1080/13538320220127489.

- Kumrow, D., & Dahlen, B. (2002). Is Peer Review an Effective Approach for Evaluating Teachers? *The Clearing House*, 7(5), 238-241.
- Lenze, L. F. (1996) Instructional Development: What Works? *National Education Association, Office of Higher Education Update*, 2(4), 1–4.
- Lomas, L., & Nicholls, G. (2005). Enhancing Teaching Quality Through Peer Review of Teaching. *Quality in Higher Education*, 11(2), 137-149, DOI: 10.1080/13538320500175118.
- Lombard, M., Snyder-Duch, J., & Bracken, C.C. (2002). Content Analysis in Mass Communication: Assessment and Reporting of Intercoding Reliability. *Human Communication Research*, 28(4), 587–604.
- Malik, D.J. (1996). Peer review of teaching: external review of course content. *Innovative Higher Education*, 20(4), 277-286.
- Mayring, P. (2000). Qualitative Content Analysis. *Forum: Qualitative Social Research*, 1(2), Retrieved December 20, 2013 from <http://qualitative-research.net/fqs>.
- Mignon, C., & Langsam, D. (1999). Peer review and Post-tenure review. *Innovative Higher Education*, 24(1), 49-59.
- Nicol, D., Thomson, A., & Breslin, C. (2014). Rethinking feedback practices in higher education: a peer review perspective, *Assessment & Evaluation in Higher Education*, 39(1), 102-122, DOI: 10.1080/02602938.2013.795518.
- Nygaard, C., & Belluigi, D.Z. (2011). A proposed methodology for contextualized evaluation in higher education. *Assessment & Evaluation in Higher Education*, 36(6), 657–671, DOI: 10.1080/02602931003650037.
- Patton, M.Q. (2002). *Qualitative Evaluation and Research Methods* (3rd ed.). London: SAGE.

- Quinlan, K.M. (1996). Involving Peers in the Evaluation and Improvement of Teaching: A Menu of Strategies. *Innovative Higher Education*, 20(4), 299-307.
- Rudd, R., Hoover, T., Connor, N., & Baker, M. (2001). Peer Evaluation of Teaching in University of Florida's College of Agricultural and Life Sciences. *Journal of Southern Agricultural Education Research*, 51(1), 189-200.
- Schilling, J. (2006). On the Pragmatics of Qualitative Assessment; Designing the Process for Content Analysis. *European Journal of Psychological Assessment*, 22(1), 28–37, DOI 10.1027/1015-5759.22.1.28.
- Schmelkin, L.P., Spencer, K.J., & Gellman, E.S. (1997). Faculty Perspectives on Course and Teacher Evaluations. *Research in Higher Education*, 38(5), 575-592.
- Swiskes, E. (1999). University of California Peer Review System and Post-tenure Evaluation. *Innovative Higher Education*, 24(1), 39-48.
- Witzel, A. (2000). The problem centered interview. *Forum: Qualitative Social Research*, 1(1). Retrieved December 20, 2013 from <http://qualitative-research.net/fqs>.

Appendix 1

Interview guideline

Participant number:

Chair group:

Course:

BSc/MSc:

Date:

Introduction

My name is Sanne Mirck. I studied at this university for my bachelor degree and am currently completing my master Educational Design and Consultancy at Utrecht University. For my master thesis I am doing research on the use of peer review as an instrument for evaluating the quality for courses in higher education. There is quite some research available about the use of peer review for teaching, but this does not focus on the course content. The aim of my research is to fill this research gap and to provide universities with hands-on information about how to organize the peer review. This interview focuses on your experiences during the peer review of your course(s) and the ideas you have about how to best organize such a review. The interview will take about one hour and I would like to ask you for permission to audio-record the interview. All data will be confidential and your contribution will be made anonymous. Only one fellow student from my programme and me will work with your information. The interview deals with four major topics and per topic I have prepared one to four questions per topic. Do you have any questions before we proceed?

Topic 1: Motivation for selection peer

Opening question: Could you tell me about the approach that you have used to find a good peer?

Sub questions:

- a. How do you estimate or judge the expertise of the peer?
- b. What is your personal relation with the peer? /Could you describe the personal relation between you and the peer?
 - How does this relationship affect the peer review?
- c. Which practical or organizational motives play a role during the selection of the peer?
- d. What is the influence of direct colleagues or the chair group during the selection of the peer?
- e. Would you make your selection of the peer in the same way in the future and why yes/no?

Summarize!

Topic 2: Issues addressed in the review

Opening questions: Did you use the format 'peer review questions' that was provided by the Education Institute?

Sub questions:

- a. For now, we will ignore the format. Which are the topics or questions that according to you should be addressed during the peer review?
- b. Suppose you were asked to make a format, how would you do that?
- c. Would you use the same format for every course and why yes/no?

Summarize!

Topic 3: Materials for the peer review

Opening question: Could you describe the materials that you have submitted to the peer?

Sub questions:

- a. Why did you choose to submit ?
- b. Which materials are according to you essential for the review procedure?
- c. Would you use the same set of materials in the future?

Summarize!

Topic 4: Use of review results

Opening question: Could you tell me something about how you have used the feedback that you received from the peer?

Sub questions:

- a. How would you describe good feedback?
- b. Did the peer review lead to new insights?
- c. Did the peer review lead to changes in the course(s)
 - If yes: Could you explain why you have decide to change these aspects?/Could you explain these changes?
 - If no: Why did you decide not to change anything in the course?
- d. (If yes at c): Do you see any effect of the peer review in the performance of students?

Summarize!

Ending

Do you have any questions or information that you like to share based on this interview? I would like to thank you very much for your contribution to my result. I will present my results on ... to the board of the Education Institute. You are invited to come to this presentation. I will send you an invitation soon.

General follow up questions

- Why do you find this aspect important?
 - What made you decide to ...?
 - Could you describe how ...?
 - How did you experience ...?
 - Could you tell me a bit more about ...?
 - Could you give an example about that?
 - Could you elaborate on that?
 - Why do you think that?
-

Appendix 2

Coding systems including definitions

Theme	Label	Defenition
Selection peer (RQ 1)	Publications	The peer has been chosen based on the publications of the peer that are known by the participant
	Research	The peer has been chosen based on the research of the peer that is known by the participant OR cooperation in research projects
	Overview field	The peer has been chosen based on his/her capability <ul style="list-style-type: none"> - to take a 'helicopter perspective' - to look beyond the borders of the field - to oversee the whole field
	Specialist on theme of the course	The peer has been chosen based on his/her <ul style="list-style-type: none"> - knowledge about the theme of the course OR an area of the study programme - experience through teaching a similar course
	Shared vision on the field	The peer has been chosen because he/she and the participants share their vision on the field
	Role teacher	The peer has been chosen because he/she <ul style="list-style-type: none"> - teaches as a professor - supervises students - has experience with the educational methods that are used in the course
	Role in other educational activities	The peer has been chosen because he/she participates in education-related activities next to being a teacher. Think about work in committees, an educational institute or the design of programme
	Works in similar institution	The peer has been chosen because he/she works in a similar university OR because he/she is familiar to the Dutch higher education system
	Works with a similar student population	The peer has been chosen because he/she works with a similar type of students
	Location	The choice for the peer was influenced by the fact that he or she was already coming to the university/the Netherlands.
	Language	The peer has been chosen because he/she speaks Dutch.
	Independence	The participant makes an explicit statements about the (in)dependent character of the relation between him/herself and the peer
	Issues addressed (RQ 2)	Enthousiasm
Willingness		The relation with the peer affects whether the participant dares to ask someone
Estimation expertise peer		The relation of the peer is important to estimate the expertise of the peer. *Take care: do not choose this code when the expertise itself is described
Up to date		The peer has looked at (or should look at) whether the course is up to date/state of the art in the field
Scientific depth		The peer has looked at (or should look at) the scientific depth of the course(s). *Take care: this is different from 'level'. The words scientific, research, etc need to be mentioned.
Structure course		The peer has looked at (or should look at) the structure of ONE course: the relation between topics and the coherence.
Structure course set		The peer has looked at (or should look at) the structure of a

		set of courses within the context of a programme and/or the relation between the learning goals of a programme and a set of courses.
	Preparation as a professional	The peer has looked at (or should look at) whether the course(s) prepares students for their future job
	Choice of themes	The peer has looked at (or should look at) at the choice for themes and topics that are discussed in the course(s)
	Gaps	The peer has looked at (or should look at) whether there are themes/topics missing in the course(s)
	Level	The peer has looked at (or should look at) the work load and whether the course is challenging enough
	Choice literature	The peer has looked at (or should look at) the literature choice
	Learning and teaching methods	The peer has looked at (or should look at) learning and teaching methods (possibly including assessment/exams)
	Didactical skills teacher	The peer has looked at (or should look at) the didactical skills of the teacher and/or the way information is presented
	Relevance	The peer has looked at (or should look at) whether the relevance of the course content for students or society is made sufficiently explicit
	Single course	The review focused on one course. Also choose this code when the participant explains why he/she has selected one course or why not.
	Set courses	The review focused on a set of courses. Also choose this code when the participant explains why he/she has selected a set of courses or why not
Materials (RQ 3)	Literature and assignments	The peer has access to the syllabus/book/reader/lecture slides.
	Interaction student-teacher	The peer looked at video material or joined a lecture/practical.
	Student products	The peer has access to student reports/essays/exams/answers.
	Information learning goals	The peer has access to the learning goals; these are usually stated in the study guide.
	Access online education material	The peer has access to online education material, eduweb or blackboard.
	Exams	The peer has access to empty exams with model answers and/or success rates.
	Feedback students	The peer has access to the results of the student questionnaires (evasys) or talked to students.
	Information student population	The peer was informed about the background/type of students in the course(s).
	Informatie programme/field	The peer was informed about the programme in which the course is embedded.
	Self-diagnose	The participant performed a strength/weakness analysis (swot) and shared this with the peer.
	Information education system	The peer was informed about the institutional context and/or the education system in the Netherlands
	Meeting with teachers	The peer talked to teacher or other educational staff.
Use feedback (RQ 4)	Reflection and discussion in the chair group	The results of the review are used for reflection and/or discussion within the chair group and/or with the peer.
	Changes in course	The results of the review are used to change a course(s) or to plan changes in the course(s) by means of action points or implementation schemes.
	Input for ongoing discussion	The results of the review were linked to an ongoing discussion or existing ideas for improvement and have been used to take decisions or to strengthen the viewpoint of the

		participant.
	Eye openers	The feedback has led to new insights/eye openers or the participants states that he/she learned from the peer review.
	Confirmation	It was nice to receive feedback because it the confirmed the quality of the course(s).
	Disagreement with proposed change	The participant did not agree with the feedback of the peer OR the feedback did not fit within the university's vision on education.
	Lack of time/money/personnel	The feedback could not be implemented due to a lack of time, money or personnel.
	Misconception	The feedback was based on a misconception or incomplete information and was therefore not used.
	Beyond control chair group	The feedback was about courses of other chair groups or problems at the program level, so the participant could not, or had limited options to, implement it.
	Closed attitude receiver	The participant mentions that he/she or his/her environment was not open to feedback.
	Little feedback provided	The participant mentions that the peer provided little feedback or points for improvement.
	Positive effect	The participant names a positive effect of the peer review (often in terms of student satisfaction).
	Negative effect	The participant names a negative effect of the peer review (often in terms of student satisfaction).
	No effect	The participant states that the peer review has no effect (often in terms of student satisfaction).
Institutional support (RQ 5)	Formative use	The participant states that the goal of peer review is to improve the course (he/she does not need to agree with this).
	Summative use	The participant states that the goal of peer review is to judge the course or teacher (he/she does not need to agree with this).
	Motivational support and feedback	The participant states that he/she would appreciate more support, appreciation and feedback from the university or education institute.
	Financial support	The participant states that he/she would appreciate financial support from the university or education institute to organize the peer review.
	Less top down decision making	The participant is dissatisfied with the way the decision making or communication about peer review has taken place. He/she thinks that this been implemented top-down.
	Workload	The participant describes aspects that increase his/her workload (not necessarily in relation to the peer review)
Alternatives peer review	Chair visitation	The peer review of course content could be combined with the chair group visitation of research (or organizing it in a similar way).
	Review at conferences	The peer review of course content could be combined with scientific conferences.
	Rotate teachers	Quality assurance of courses could be organized by circulating courses among the staff of a chair group.
	Review within chair group	The peer review of course content could be done by a peer from the own chair group or university.
	Review only when there is a problem	The peer review of course content should only take place when there is a problem with the course (when the course received bad scores in the student evaluation).
	Students assistants	Quality assurance of courses could be organized by asking student assistants to provide feedback
	Peer from outside the field	The peer review of course content could be done by a peer

Background information	Date review	from a different field.
	Cycle	The participant tells in which year the review took place. The participant makes a statement about what would be the best cycle or timing for a review.
	Number of day parts used for review	The participant tells about the number of days, day parts or hours used by the peer for the review.
	Responsibility teacher	The course coordinator or teacher has the responsibility for the review. The participant describes the role of this individual during the review.
	Responsibility chair group	The chair, teaching coordinator or chair group as a team has the responsibility for the review. The participant describes the role of the team during the review
	Gift	The peer received a gift for the review activities.
Payment	The peer was paid for the review activities.	
