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**The research-teaching nexus in the humanities :
variations among academics**
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Summary

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Background

Research and teaching are the two main tasks of a university, and are essential to its identity. Therefore, the relation between both has been the focus of attention for several decades. Until the 1990s attention was primarily paid to the correlation between being a good researcher and being a good teacher, measured by either citation indices or student satisfaction. A meta-analysis (Hattie & Marsh, 1996) showed only a marginal correlation. However, many academics were convinced of the importance of the relation. In the last decades there has been a lot of attention for questions of academics' views on this relation and the importance of the research-teaching nexus. This research project is to be placed in this tradition. Unlike earlier comparative studies, this project concentrated on academics within one faculty, the Faculty of Humanities at Leiden University.

Research questions

In this research project the focus was on how academics (including assistant professors, associate professors, and full professors) view the research-teaching nexus. We were interested in their conceptions on this connection, how these conceptions are related to their conceptions of knowledge, research, and teaching, and whether strengthening the link between research and teaching in their own courses changed their conceptions. Furthermore, we studied students' perceived learning gains in these learning environments. The following five research questions were central in this thesis:
- What are the relations between the conceptions of knowledge, research, and teaching held by academics in the humanities? (Chapter 2)
- What variations in ideal images of the research-teaching nexus can be found among academics in the humanities? (Chapter 3)
- How is the preferred research-teaching nexus related to conceptions of knowledge, research, and teaching, and to (disciplinary) background? (Chapter 4)
- In what ways do academics in the Faculty of Humanities integrate research in their teaching when encouraged to, and what learning outcomes do their students report? (Chapter 5)
- What change patterns occur in academics' conceptions of the research-teaching nexus when they intentionally integrate research in their teaching? (Chapter 6)

Research design

To answer the questions posed above two studies were conducted. The first concerned an interview study in which thirty academics from the Faculty of Humanities were interviewed about their backgrounds, conceptions of knowledge, research, and teaching, and their ideal images concerning the research-teaching nexus. The conceptions of knowledge, research, and teaching were studied on the basis of metaphors, whereas the ideals were studied using a mental visualisation assignment. The second study focused on twelve academics of the same faculty during one semester, in which they intentionally strengthened the research-teaching nexus in one of their courses. This was done on the basis of their personal views of the best way to connect research and teaching. Before the semester there was an introductory session, and during the semester they attended three peer meetings to reflect on their teaching and share experiences and ideas. Data were gathered from the academics as well as their students.

Results

First study

The second chapter addresses the research question: *what are the relations between the conceptions of knowledge, research, and teaching held by academics in the humanities?* In answering this question it needs to be noticed that concepts such as 'research' and 'teaching' can be interpreted differently among academics. These different interpretations, including views on the relation between them, might have their grounds in academics' conceptions of knowledge (Robertson & Bond, 2005). Studying conceptions is complex as they are partly unconscious, context-dependent, and people are not always willing to reveal them. Therefore, in this study metaphors were used to elicit academics' conceptions. Metaphors contain several layers of meaning and therefore provide opportunities to uncover respondents' conceptions. Furthermore, each respondent interprets the metaphors in a different way and thus is not limited to the researcher's predefined categories. Thirty academics were each presented with six metaphors about knowledge, research, and teaching, for example: knowledge is (like) a pyramid: stone by stone it is built up to a great height; research is (like) an excavation: underlying patterns are uncovered and teaching is (like) a demonstration: a matter of showing and imitating. Finally they were invited to create their own metaphor for each concept. On the basis of an interpretive analysis of key statements, academics' conceptions of knowledge, research, and teaching could each be characterised as five different conceptions on a dimension. For knowledge this dimension ranged from *knowledge as isolated*

facts in an external world to *knowledge as a personal construction*. For research the conceptions varied from *research as an activity in which patterns are disclosed* to *research as an activity in which patterns are created by the researcher*. The teaching conceptions could be placed on a dimension running from *teaching as an activity in which knowledge is transmitted to the students* to *teaching as an activity in which the main goal is to teach students to think critically and possibly to change students' conceptions*. A substantial and significant correlation was found between conceptions of knowledge and of research. Teaching conceptions were weaker correlated with conceptions of knowledge and of research.

The third chapter focuses on the research question: *what variations in ideal images of the research-teaching nexus can be found among academics in the humanities?* After the discussion of knowledge, research, and teaching conceptions in Chapter 2, the focus in this chapter was on academics' conceptions of the research-teaching nexus itself. In the literature various models are found to characterise the relation between research and teaching. Neumann (1992), Griffiths (2004), Healey (2005) en Robertson (2007) present different ways to identify the variations in linking research and teaching. These characterisations could be placed on various positions on the following five dimensions: tangible – intangible, specific – diffuse, one directional – reciprocal, result – process, and audience – participants. In this part of the study a mental visualisation assignment was used to identify academics ideal images of the research-teaching nexus. The respondents were encouraged to imagine and describe these in detail. A code book was developed and the combination of quantitative (hierarchical cluster analysis) and qualitative (based on case-variable matrices) analyses resulted in the identification of five different profiles. The first profile is *teach research results*: knowledge that is derived from research is transmitted to the students. The teacher is an expert, discussing the literature and telling the students about research results in the discipline. The second profile is *make research known*: students need to get acquainted with and preferably enthusiastic about research. The teacher uses examples of his/her own research to explain what research really entails. The third profile is *show what it means to be a researcher*: the teacher is a role model for the students by showing them what it means to be a researcher; the first thing one needs is an academic disposition. Furthermore, the teacher speaks about own research experiences, while focusing on the research process. The fourth profile is *help to conduct research*: students are given research assignments and the teacher acts as a tutor, supporting the students in these projects and focusing on stimulating an academic disposition. If possible,

the teacher will also introduce the students to the academic world. The fifth profile is *provide research experience*: students participate in the teachers' own current research projects and thus contribute to generating academic knowledge. The teacher is a guide for the students. Finally, these five profiles were placed on the dimensions derived from the literature.

In the fourth chapter, the results of Chapters 2 and 3 are related to each other and to respondents' backgrounds on the basis of the question: *how is the preferred research-teaching nexus related to conceptions of knowledge, research, and teaching, and to (disciplinary) background?* Because of the ongoing debate in the literature about the role of the discipline we paid explicit attention to this theme in this chapter. A substantial distinction is whether a discipline contains one dominant paradigm (hard) or several equivalent paradigms (soft). A second distinction is whether the discipline concerns fundamental or applied sciences. The research literature (Brew, 2006; Robertson, 2007) does not show a consistent picture concerning the meaning of academics' disciplinary backgrounds for their conceptions of the research-teaching nexus. In this chapter four questions are at the centre: 1) Is the preferred research-teaching nexus related to discipline? 2) Is discipline related to conceptions of knowledge, research, and teaching? 3) Is the preferred research-teaching nexus related to conceptions of knowledge, research, and teaching? 4) Is the preferred research-teaching nexus related to age, sex, and position? The thirty academics were equally represented from the three disciplines within the faculty, namely culture and literature, (art) history, and linguistics. No correlation was found between academics' ideal images and the discipline. An association was found between conceptions of knowledge and research, and their disciplines. The linguists viewed knowledge mainly as facts and research as the disclosure of patterns, while historians and literary scholars viewed knowledge mostly as a personal construction and research as the creation of patterns. Conceptions of teaching were not related to discipline. Yet, the ideal image of the research-teaching nexus was related to teaching conception rather than to knowledge and research conceptions. *Show what it means to be a researcher* was associated with a teaching conception *focused on critical thinking and conceptual change*, while *help to conduct research* was associated with teaching as *knowledge transmission*. Furthermore, the only background variable correlated with the ideal image was the position of an academic at university: assistant professors were predominantly found in *teach research results* and *help to conduct research*, while associate and full professors were mostly found in *make research known* and *show what it means to be a researcher.*

Second study

In the fifth chapter the focus is on the relation between a research-intensive learning environment and students' learning, on the basis of the question: *in what ways do academics in the Faculty of Humanities integrate research in their teaching when encouraged to, and what learning outcomes do their students report?* Previous research has shown that academics see the development of an academic disposition among students as an important goal of linking research and teaching (Elen et al., 2007). Several kinds of learning environments are considered research-intensive, such as inquiry learning, which can take place either individually or in teams. Other variants are discussing the teacher's own research and methodology courses. Students report mainly positive, but also some negative experiences of research-intensive learning environments (Turner et al., 2008). A negative aspect is the reduced availability of their teachers for educational purposes. Positive aspects are the intellectual stimulating learning environments that are created by researchers. In the literature, so far, the learning environments and students' perceptions of the research-teaching nexus had been studied separately. In this study we combined the learning environments and students' experiences. During one semester twelve academics were studied, focusing on one of their courses, in which they strengthened the research-teaching nexus. At the end of the semester the students were asked to report their experiences and perceived learning gains of these courses. Five different learning environments were identified: using teacher's own research to illustrate the subject matter; focusing on the researcher's disposition and position; introducing students to literature, after which students conduct research projects; follow in the teacher's footsteps; and participation in the teacher's research. Two teachers taught first- and second-year courses and mainly focused on basic knowledge and research skills. Their students reported learning in these areas. Two other teachers focused on encouraging an academic disposition; their students primarily reported learning outcomes related to academic disposition. The three teachers in the third group dived their courses into a part that concentrated on theory, and a part in which students conducted research projects. They mainly focused on research skills; their students reported learning research skills, but also acquiring an academic disposition. Another group of three teachers focused on skills and knowledge in the context of students becoming independent researchers. This group was characterized by the close attention that was paid to the teacher's own research. Their students reported knowledge gains and learning outcomes on research awareness. The last two teachers were also focused on knowledge and research skills, but their students participated in the

teacher's own research. These students primarily reported learning gains on research skills. Overall, we can state that the students reported more learning on the level of academic disposition (by doing and reflecting on research) and research awareness (by a close look into their teacher's research), while their teachers primarily focused on academic knowledge and research skills.

In the sixth chapter, the focus is on the changes in academics' conceptions resulting from their attempts to strengthen the research-teaching nexus, on the basis of the question: *what change patterns occur in academics' conceptions of the research-teaching nexus when they intentionally integrate research in their teaching?* In educational innovation teachers have proved to be a crucial factor for success. Teachers' conceptions are important in this respect, and are seen as not likely to change easily. This especially applies to core beliefs about concepts such as *learning* and *teaching*; the assumption is that peripheral beliefs change more easily (Pajares, 1992). In this study the focus was on any changes that occur if academics are invited to strengthen the research-teaching nexus in their own way during one semester. The twelve teachers (see Chapter 5) were given Q-sorts with statements on the research-teaching nexus, before and after the semester. They were asked to order these statements according to importance, based on the principles of Q-methodology, and were also interviewed about their ordering. Five factors were identified on the basis of factor analysis: stimulating academic disposition in general; utilising teacher's own ongoing research in teaching; training students to become independent researchers; discussing disciplinary research problems; and students participating in research as co-workers. Next, three change patterns were identified. No change was found for the first group of teachers; their scores after the semester hardly differed from those before. The second group of teachers showed a change on a non-dominant factor. Their scores on the main view were almost equal before and after, but on one of the factors changed considerably. The final group of teachers even changed their dominant factor. At the start of the semester they showed a different view than afterwards. In this last group the dominant factor had relatively low scores at the start compared to the dominant factors of the other teachers, i.e., they started with a less distinct view than their colleagues in the other two groups. However, a distinct view did not mean that no changes were found, as was shown by group two. This is even more striking considered the fact that all academics were supported to strengthen the research-teaching nexus in ways closely related to their views. So, even when academics are innovating their teaching while staying close to their own beliefs, these beliefs are not static, but might change.

Conclusion and discussion

Regarding the first study it can be noticed that conceptions of knowledge and research are closely related, while teaching conceptions are only weakly related. Furthermore, knowledge and research conceptions are related to discipline, while teaching conception is related to the conception of the research-teaching nexus. Teaching conception is also related to academics' positions within the university. The conceptions of knowledge, research, and teaching can be placed on dimensions stretching from the disclosure and transmission of facts to creating meaning for what is discerned. In the second study attention was paid to the learning environments created by the participants and their conceptions. The students reported more learning gains on academic disposition and research awareness than their teachers actually aimed for. One third of the participants did not change their conceptions about the research-teaching nexus during the research project, while the views of the other two thirds did change. In Chapters 5 and 6 five categories of ways to link research and teaching were identified. However, no association was found between academics' conceptions and the learning environments, or with academics' change patterns. If discrepancies between conceptions and learning environments were identified the context seemed to be most influential. Regarding the coherence between the different categorisations of the research-teaching nexus described in the Chapters 3, 5 and 6, three forms were found in Chapter 3 (ideals) and Chapter 6 (Q-sort) with only small differences: 1) students learn about research on the basis of their teacher's research examples, 2) research assignments are used to provide students the opportunity to become independent researchers, 3) students participate in their teacher's research. In different ways the other forms combine aspects such as achieving an academic disposition, a focus on disciplinary research, a focus on either the research process or the research content, and the reciprocal character of the nexus. Relating these characterisations to the learning environments leads to the conclusion that the profiles in Chapter 3 are most useful in this case. Therefore, it is this categorisation that is recommended as a tool to identify the various ways the research-teaching nexus can take, while the views in Chapter 6 provide more punctual, coherent, and less prototypical images of academics' conceptions.

One of the strengths of this research is the open approach that was used. The basic assumption, i.e., that conceptions of the research-teaching nexus vary, meant that no specific forms of the research-teaching nexus were given prevalence over the others. The main idea was to give space to the wide variety of

academics' ideas and forms. One of the other strengths is the variety in methods used to study academics' conceptions. The main limitation was the sample in this study, i.e., the only participants were academics working at the Faculty of Humanities in a research university. Additional variations of the research-teaching nexus might have been found if academics from other disciplines or other higher education institutes had been involved. Furthermore, the sample was fairly limited in number, especially in the second study, resulting in categories with only a few representatives. A final limitation concerns the use of self reports, which is almost inevitable in studying conceptions. To limit the restrictions of self reports several different types of instruments were used and participants' students were involved as well.

Further research might include case studies as well as large-scale studies in different faculties. Case studies are a suitable means to study the interaction between conceptions, context, and the learning environments academics create. In large-scale studies in a great number of faculties the six dimensions identified in Chapter 3 might be used. Furthermore, the relation between research intensive learning environments and students learning might be studied further. This research project provides the university with tools to continue the discussion about the research-teaching nexus. On the basis of the profiles and dimensions in Chapter 3 academics and administrators might discuss what they actually talking about when they mention a strong research-teaching nexus. Finally, this research has again demonstrated the importance of teaching conceptions, and shown that participation in innovation projects in which academics are putting effort in strengthening the research-teaching nexus leads to better-considered views on this relation.