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Gerda J. Visser-Wijnveen [a]; Jan H. Van Driel [a]; Roeland M. Van der Rijst [a]; Nico Verloop [a]; Anthonya Visser [b]

[a] ICLON Graduate School of Teaching, Leiden University, Leiden, The Netherlands [b] Faculty of Humanities, Leiden University, Leiden, The Netherlands

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The ideal research-teaching nexus in the eyes of academics: building profiles

Gerda J. Visser-Wijnveen[a]*, Jan H. Van Driel[a], Roeland M. Van der Rijst[a], Nico Verloop[a] and Anthonya Visser[b]

[a]*ICLON Graduate School of Teaching, Leiden University, Leiden, The Netherlands;* [b]*Faculty of Humanities, Leiden University, Leiden, The Netherlands*

Research and teaching are supposed to be closely related in universities. Among academics the belief in a symbiotic relationship is strong. However, it is unclear what form this relationship can take. Several authors have presented categories and dimensions to clarify this relationship and the aim of this project was to contribute to this discussion by understanding what academics' ideal research-teaching nexus would look like. The ideal images of 30 academics were investigated using a mental visualisation assignment. Respondents were encouraged to describe in detail what for them the linkage between research and teaching would look like in the ideal situation. Five profiles of the research-teaching nexus could be distinguished: teach research results; make research known; show what it means to be a researcher; help to conduct research; and provide research experience. These profiles are related to dimensions proposed earlier in the literature on the research-teaching nexus.

Keywords: dimensions; faculty of humanities; ideal images; profiles; research-teaching nexus

Introduction

Strengthening the linkage between research and teaching has been a popular theme in higher education research, as universities have been going through significant changes in recent decades – one of the most important being the massification of higher education (Brew, 2003). The old ideal of Wilhelm von Humboldt – the common pursuit of knowledge by teacher and student (Simons, 2006) – is still an important image of what a university should be: a place where research and teaching are united. However, a unity is not easily realised and many universities and academics struggle with the issue. One of the main problems in the discussion about the research-teaching nexus is that the term is used for many different kinds of 'activities' in the university and that many different words are used for the same activity. Several authors (Brew, 2003; Griffiths, 2004; Healey, 2005; Neumann, 1992; Robertson, 2007; Trowler & Wareham, 2008) have recently identified categories or dimensions that show the variety of meanings inherent in the concept of research-teaching nexus. Our point of departure is that there is no one or best way of relating research and teaching (Elsen, Visser-Wijnveen, Van der Rijst, & Van Driel, 2009); the richness is in the diversity of

*Corresponding author. Email: gjvisser@iclon.leidenuniv.nl

ways in which research and teaching might be linked. We will discuss several theoretical and empirical categorisations that demonstrate that diversity. Consequently, studies that do not differentiate between various forms of the research-teaching nexus are not taken into account, neither are literature reviews.

Categorisations of the research-teaching nexus

Neumann (1992) conducted an interview study among academic administrators from several disciplinary backgrounds and distinguished three different ways of relating research and teaching: the tangible nexus, the intangible nexus and the global nexus. The tangible nexus focuses on the transmission of current knowledge – that is, recent outcomes of the teacher's research – to the students. The intangible nexus focuses on influencing students' perceptions of the status of knowledge and on their attitude towards knowledge. Instead of the individual level, the global nexus focuses on the departmental level, more precisely at the impact of the department's research program on the curriculum. We would argue that, conceptually, the global nexus is closer to the tangible than the intangible nexus, as both are focused on content.

Griffiths (2004) described three dimensions of the relationship. First, the relationship can be specific, directly related to concrete projects of the teacher, or diffuse, consisting of a more general way of thinking based on the academic's research experience. Second, the research can be embedded weakly or integrated strongly in the teaching. In the first case research results merely function as input for the curriculum, while in the second case the approach to teaching is influenced as well: more attention is paid to the process of knowledge production with students becoming partners in research. The third and last dimension is the direction of the relationship: it is either unidirectional, flowing from research to teaching, or reciprocal, with research and teaching profiting from each other. Bearing these dimensions in mind, Griffiths (2004) identified four different forms of the research-teaching nexus: research-led, research-based, research-oriented and research-informed. However, he does not explain how these four forms were related to the earlier presented dimensions. Interestingly, Griffiths (2004) also included pedagogical research (research-informed) next to three forms of discipline-based research.

Healey (2005) built on Griffiths' (2004) ideas by putting these different forms into a model. From a curriculum perspective he distinguishes three dimensions. In his model the dimensions student-focused versus teacher-focused and students as participants versus students as audience form one axis, and emphasis on research content versus emphasis on research processes and problems the other. In this way four different ways of shaping to the research-teaching nexus can be distinguished: research-led (research content and students as audience), research-tutored (research content and students as participants), research-based (research processes and students as participants) and research-oriented (research processes and students as audience). Later, Healey deleted the first dimension (Jenkins, Healey, & Zetter, 2007), a decision we will follow in this paper (see Figure 1).

Robertson's (2007) categories were concerned with the nature of the linkage between research and teaching as understood by academics. Category A is labelled 'weak', symbolising the almost non-existence of a relationship between research and teaching: research and teaching are separate tracks. Category B is labelled 'transmission': both research results and enthusiasm are transmitted to the students. Category C is labelled 'hybrid': it comprises aspects from both sides, such as emphasis on basic

STUDENT AS PARTICIPANT

Research-tutored   *Research-based*

EMPHASIS ON
PRODUCTS OF ———————————— EMPHASIS ON
RESEARCH   PROCESS OF
                            RESEARCH

Research-led   *Research-oriented*
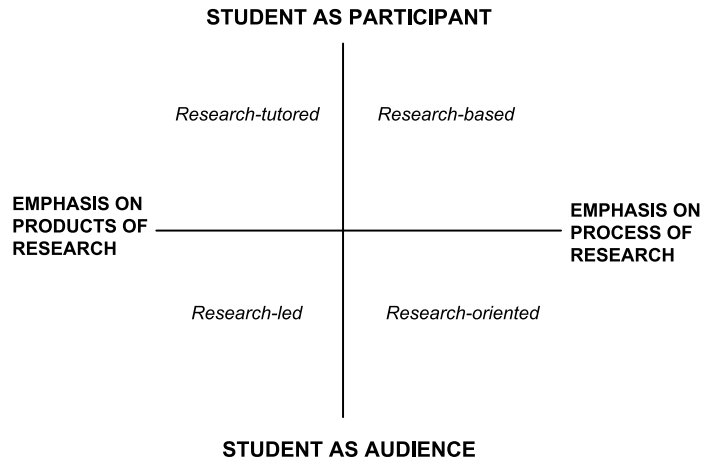
STUDENT AS AUDIENCE

Figure 1.   Healey's (2005, 2007) adapted model of the research-teaching nexus.

knowledge, but also the first steps in some kind of research participation. Category D is labelled 'symbiotic': research and teaching are separable, but strongly related – the process of teaching links student learning with academics' learning. Finally, category E is labelled 'integrated' as it sees research and teaching as inseparable. In D and E an important place is attributed to 'learning' as a mediator of research and teaching, a view that was earlier expressed by Brew and Boud (1995).

Before turning to a synthesis of the presented literature it is important to note that the categorisations are based on different principles. The classifications presented by Griffiths (2004) and Healey (2005) are theory-based. Others are based on empirical studies using interpretive analysis: interview studies with administrators (Neumann, 1992) and academics holding different university positions (Robertson, 2007) on their views of the research-teaching nexus, respectively.

A few key observations can be made from the analysis of the categories and dimensions described in these different studies. We will focus on discipline-based research, thus excluding Griffiths' (2004) concept 'research-informed'. Neumann (1992) explicitly distinguishes between the individual and the department level. The categories identified by most authors might be seen as relating to the individual level, although Robertson's (2007) weak label might be interpreted as relating to the global level, namely to keep research and teaching separate. Griffiths' (2004) second dimension touches this notion as well, as he describes the weak link as the input of research outcomes in the curriculum, whereas the strong link also influences the way of teaching. His dimension captures two aspects, the first being the distinction between students as an audience receiving the outcomes of the research and students as participants engaging in research. This distinction is incorporated by Healey (2005). The other aspect of Griffiths' (2004) second dimension is the basis for a distinction mentioned by all researchers, namely the focus on the research output, recognisable in the tangible nexus and the categories research-led, research-tutored, transmission and hybrid, versus the focus on the research process, recognisable in the categories research-oriented, research-based, symbiotic and integrated. This dimension is part of Healey's model (2005) as well. Robertson (2007), however, stresses that in symbiotic and integrated categories the notion that the research process includes a certain

epistemological view is important. This aspect is covered by the division Neumann (1992) makes in her distinction between tangible versus intangible nexus. In her later work Neumann (1994) includes the process skills in the tangible nexus, making it a dimension that is more than just another representative of the outcome-process dimension. Griffiths' (2004) dimension of specific versus diffuse goes slightly unnoticed by the other authors, as most of them focus on specific forms of linking teachers' own research to teaching. However, one could argue that the intangible nexus is diffuse, as it might not refer explicitly to particular research projects but to the broader notion of being a researcher. Robertson (2007) is the only author to pay attention to Griffiths' (2004) third dimension, i.e., the difference between a unidirectional relationship versus a reciprocal one. Her 'weaker half' is focused on the direction 'research towards teaching', while the more 'integrated half' also includes the direction 'teaching towards research'. The other authors seem to assume a unidirectional relationship. In sum, we see several dimensions behind the various categories: tangible-intangible, specific-diffuse, unidirectional-reciprocal, output-process and audience-participant.

Aim of the study

The present study was an attempt to provide an empirical basis for a categorisation that captures the variety of potentially powerful linkages between research and teaching. We wanted to pay attention both to the categories that might be identified and to the dimensions underlying them, taking the academic's perspective as our point of departure. From earlier research (Brew, 2003; Robertson & Bond, 2001) we know that the research-teaching nexus and its components are understood differently by different academics. The differences that arise might be partly caused by disciplinary differences, which are related to differences in epistemology, truth criteria and culture (Becher, 1989; Donald, 1986; Robertson & Bond, 2005). In this study we focused on one area of scholarship, namely the humanities.

Although experiencing tensions, most academics prefer to do both research and teaching (Evans & Bertani Tress, 2009; Jensen, 1988). A frequently reported problem affecting the realisation of a strong linkage between research and teaching is the presence of limiting pre-conditions, especially the preference given to research over teaching. This comes to light, for instance, in reward systems and time allocation problems, as research time is frequently subordinated to teaching time (Coate, Barnett, & Williams, 2001; Colbeck, 1998). The classifications discussed investigated not only authors' or academics' preferred linkages, but also included those that they view less favourably. Healey (2005) and Robertson (2007) mention this explicitly. To limit these problems, in our search for qualitatively different but powerful forms of the research-teaching nexus, this study used an unconventional way of questioning, namely concentrating on academics' ideals. Academics' visions, understood as their images of ideal practice, strongly shape their professional lives because academics' purposes are expressed in these visions or images, whose role is that of intuitive guides (Hammerness, 2003; Husu & Tirri, 2007). These images represent what academics try to work towards, in the conviction that they themselves and the students will benefit from them. Therefore, ideal images are important mediators between conceptions and daily practice (Feiman-Nemser & Floden, 1986). Furthermore, images are a rich source of information, as they contain a whole set of ideas around a persistent thread, based on personal experience (Johnston, 1992). Evans and Bertani Tress (2009) stress that in their attempt to elicit academics' ideal jobs the respondents

were freely talking about their real concerns and wishes, instead of upholding the 'right appearance'. So concentrating on ideal images has the advantages of avoiding possible constraints, providing opportunities to talk freely about participants' own ideas, while the ideal images are related to academic practice. In short, this study aimed to investigate the variation in ideal images held by academics from the field of the humanities in order to gain an understanding of the different ways in which the research-teaching nexus could be shaped.

Methods

Sample

Data were collected via semi-structured interviews with thirty academics from the Faculty of Humanities (formerly Faculty of Arts) of Leiden University; being the oldest university of the Netherlands it may be characterised as 'research-intensive'. As we wanted to investigate the variation within the field of the humanities we used stratified sampling, with samples taken from the different disciplines. Previous interviews indicated that there are two aspects that are important in obtaining a representative sample: discipline and region. There are three main disciplines in the Faculty: history, linguistics and literature. Besides, there are differences in the research traditions and disciplinary cultures between the Western language and culture studies and the non-Western language and culture studies. A final condition for selection as a respondent was the requirement to have both research and teaching duties. This meant that language skills teachers were excluded, as they do not have a research role. The strata, accordingly, were:

- History & Art History: half Western and half non-Western;
- Linguistics: half Western and half non-Western; and
- Literature & Culture: half Western and half non-Western.

All 30 academics invited were willing to participate in the interview study. A minority of 43% of the respondents was female. The respondents consisted of 15 assistant professors, 5 associate professors and 10 full professors, with ages ranging from 30 to 58 years old.

Procedure

The academics were interviewed using a mental visualisation assignment. This mental visualisation assignment was part of a larger interview on the research-teaching nexus, further consisting of questions on background information and academics' conceptions of knowledge, research and teaching, which are not reported here. The interviews were conducted in Dutch and the visualisation assignment took about 20–30 minutes. All interviews were audio-taped and transcribed verbatim. Respondents were encouraged to describe what the linkage between research and teaching would look like in the ideal situation by answering the following basic question: 'Please tell me what the research-teaching nexus would look like in the ideal situation, when you do not have to take into account any practical constraints?' Questions used to facilitate this description and support a detailed blueprint included: 'What is your most important goal?', 'What kind of students do you have?', 'What roles do the various participants have?' and 'What activities are undertaken by your students?' By means

of these questions we wanted to encourage the academics to provide a detailed blue-print of their ideal situation. However, the respondents did not need to answer all the questions one by one; these were mainly used if needed to encourage the respondent to describe the situation in more detail. For example, in answer to the basic question, one of the respondents said (as part of a 3300-word description):

> After the students have attained a basic knowledge of the field most of the time needs to go to the exemplary demonstration. This means that students and teachers work together in research. In our discipline we have informers work with somebody who speaks a language relatively unknown. As a group of students, led by the teacher, you try to find the structure of the language. This is even more than just a demonstration of research; it is a form of research cooperation under supervision.

Analysis

The analysis comprised three phases: (1) the development of a code book, (2) applying the code book in a holistic way and (3) searching for patterns among respondents' answers. In the first phase, the aim of the analysis was to do justice to the variation in ideal images of the research-teaching nexus, so every single idea in each of the ideal images needed to be covered. We therefore used an inductive approach, in which the codes emerged from the transcripts by breaking down each interview into phrases that represented an idea (Strauss & Corbin, 1990). This process was repeated until all diversity seemed to have been captured, i.e., until saturation was reached (Guest, Bunce, & Johnson, 2006). The sub-codes were combined into a number of steps in order to arrive at a code book with several layers. For every sub-code short definitions and demarcation rules were formulated. An example will illustrate this part of the analysis process (see also the paragraph code book below): one of the respondents said 'Well, I think that the main goal is that you can use all your knowledge and experience acquired as researcher in educating the students to be able to think critically'. This was coded as *critical thinking*. Together with three other sub-codes it was combined into the general code *academic disposition*, which was part of the category *towards teaching* within the theme *orientation*. In the definition for *academic disposition* all sub-codes that made up this general code were included.

In the second phase all the transcripts were coded, with the complete description of the ideal situation of one individual as a unit of analysis. In this way it was possible to do justice to the holistic character of each description. This phase involved using an independent coder who was not familiar with the data. After independent coding, the interviews were discussed extensively in three consecutive sessions in order to ensure agreement on the interpretation and allotment of every code in the code book.

The third phase of the analysis focused on finding patterns in the codes. In the search for these patterns we followed three routes: (1) an explorative hierarchical cluster analysis (quantitative method), (2) a case-variable matrix (qualitative method) and (3) a comparison of the results of both methods. First, a hierarchical cluster analysis was carried out on all ideal images (at code level) to explore whether there were homogeneous clusters of cases within the data. In this way cases that were most closely related on the basis of overlapping codes could be identified; thus resulting in an overview of several layered clusters of related cases, i.e., ideal images. Average linkage within groups was used to calculate the mean distance between all possible cluster pairs, as this method focuses on homogeneity within clusters. The clustering method selected was DICE (or Czekanowski or Sorensen measure). This measure

excludes joint absences and accords a double weight to matches (Everitt, Landau, & Leese, 2001) and is therefore best suited to accommodate the disadvantage of having a large number of codes and substantial differences between the numbers of codes for the different cases, which causes a large amount of joint absences and a small number of matches. The number of clusters was determined by the requirements that every case had to be included in a cluster and that there should be a reasonable increase in distance.

As the hierarchical cluster analysis only takes into account code level and therefore ignores the fact that the codes were nested in a number of layers, i.e., categories and themes, we considered it necessary to conduct a second analysis in order to take this nested coding (especially the categories) into account. Several cross-case matrices were constructed for this purpose (Miles & Huberman, 1994) each with one theme as base, consisting of rows containing the interviews, i.e., cases and columns containing the variables at code level, embedded in their categories. Clusters were identified in several steps. First, all cases sharing the same codes in the base theme were put together into a set. Second, the characteristics of each set were defined by their dominant codes. Third, cases that occurred in a number of sets were granted to the set that best fit the characteristics. Fourth, the final characteristics of each set were decided upon. The results of these different cross-case analyses were compared and a final classification of the set, from now on called clusters, was determined by using a meta-matrix. The last step was to compare and integrate the results of the hierarchical cluster analysis and the matrix analyses. The final clusters were established on the basis of the highest degree of homogeneity: the differences between the two results were analysed, for every case that ended up in two different clusters we decided on the basis of the dominant codes in each cluster which would be the most appropriate place. The final clustering was analysed again regarding the occurrence of the codes. A code was seen as a central aspect of a cluster only if it occurred in a majority of the cases.

Results

Code book

We were able to distinguish four essential themes that are important in giving meaning to the research-teaching nexus, namely: *orientation*, *approach*, *curriculum* and *teacher role*. Each theme contained two to four categories and each category was based on two to four codes. See Figure 2 for the structure of the code book. In this section we will first provide a general overview of the variation that was mapped. Regarding the first theme, *orientation*, a distinction was made between the categories, an orientation *towards research* or *towards teaching*, in other words: what are the benefits for research and/or for teaching? The benefits for teaching reported were contributing to students' *academic disposition*, *divulging research*, *training* students to become *researchers* or sharing *academic knowledge*. The benefits for research mentioned were bringing in the *input of students*, *stimulating reflection* or *broadening your research scope*. Regarding the theme *approach*, four different stages were identified, with each subsequent stage also covering the previous. The first stage was the category *learning about research*, including the codes *literature reading* and *listening to a researcher*. The second stage was starting to learn in a research-like way, the category *inquiry learning*, including the codes *analysing*, *studying*, *discussing* and *reporting*. The third stage involved incorporating the earlier phases into an environment that

Themes	Categories	Codes	Definition
Orientation	Towards teaching	Academic disposition	*… the teaching is focused on students developing an academic disposition such as*
	Towards research		
Approach			
Curriculum			
Teacher role			

Figure 2.   Structure of code book.

completely captured the whole research process, the category *simulation*, with codes *group work* as well as *individual work*. The final stage was to become a member of the research community through *participation*, either in the *teacher's own research* or in the *academic world*. For the theme *curriculum* two phenomena were important, first the question whether the curriculum was based on *disciplinary research* or the *teacher's own research* and, second, whether it focused on *research process* or *research content*. Besides, the stage of the research was also important, was it *recent* or not. The last theme, *teacher role*, included roles that were inseparable from the *dual mode* of being both a researcher and a teacher, the codes *tutor*, *expert*, *guide*, *motivator*, *partner* and *role model*, and roles that qualify as more *general teaching roles*, namely the codes *developer*, *manager* and *confidant*.

Classification

The initial hierarchical cluster analysis showed five clusters with a meaningful difference. A first division was made between clusters 1–3 and clusters 4–5. The main difference here was found in the theme *approach*: whether students *participated* in research (4–5), or did *inquiry learning* and were *learning about research* (1–3). A second division was made between clusters 1–2 and cluster 3. In cluster 3 the *teacher's own research process* is an important curriculum element, while clusters 1 and 2 tend towards a focus on *research content* and *disciplinary research*, respectively. A third division was made between clusters 4 and 5. The main difference between these was in *orientation*: cluster 4 focuses on the category *towards teaching*, more specifically the codes *academic disposition* and *train researcher*; cluster 5 focuses on *towards research,* more specifically the *input of students*. The last division was made between clusters 1 and 2. The main difference here was again in *orientation*: the dominant presence of the code *academic knowledge* in cluster 1 and an absence of the code *academic knowledge* in cluster 2.

    The various matrix analyses each time resulted in 5–6 clusters. The cluster-code matrix, which had been constructed to see whether there were similarities between the clusters in each of the analyses, showed a relatively stable group of five clusters. Sometimes one of the five was split up into two clusters. The theme *orientation* was

found to be strongly related to specific codes in other categories and thus served as an important distinguishing factor between the clusters. Some respondents had more than one orientation; on the basis of their codes in the other categories they could also be easily placed in any one of these. Only the *orientation towards teaching – academic disposition* needed to be split up into two different groups based on the different teacher roles. The clusters were named A–E, matching their counterparts 1–5 in the hierarchical cluster analysis.

Comparison of the two different clustering methods showed that three of the five clusters were very similar (1/A, 3/C, 4/D). Clusters 2/B and 5/E were a little different. The final clusters can be summarised in Table 1.

The five profiles of the research-teaching nexus are described in detail below, illustrated by quotes from the interviews (translated from Dutch). The labels refer to the disciplinary backgrounds of the respondents (C = literature and culture, L = linguistics and H = history and art history). We would like to emphasise that it was not our purpose to assign respondents to specific profiles in order to be able to relate background variables to the different profiles. The profiles should rather be seen as prototypes. Furthermore, we would like to stress that not all codes were included in a profile, as some codes were not distinctive enough to contribute to a definition of the profiles.

1. Teach research results. The first profile focuses on the teaching of research results: academic knowledge is transferred to students by direct communication from the teacher or by reading literature, which leads the teacher to reflect on the discipline. L9 explained:

> The goal is twofold. It is important for the researcher to be able to test his own ideas, including testing them out with his students. … For students it is a way to become informed about the state of play in the research field.

Furthermore, the students participate in discussions on the topics proposed. This means that the focus is on content and the teacher acts as an expert. As expressed by H6:

> In the ideal situation the students are taught by the expert in the international field, because he has been doing this type of research for years.

2. Make research known. The second profile focuses on making research known: it is oriented towards divulging research. The crucial nature of this is clarified by L3:

> If you don't bring students into contact with current research and set them up to do research themselves or give them the resources to understand current research, you should not be called a university.

Part of this familiarisation with research is stimulating academic dispositions in students. This goal is reached by ensuring that students discuss and report research. Furthermore, the teachers are able to display their enthusiasm by using examples (content) from their own research, while focussing on the research process in general. H10 explains:

> To me it is important to use my own research experience in the courses; the way you talk about certain things. It is important to show the students some of that, including what's exciting about doing research.

3. Show what it means to be a researcher. The third profile focuses on showing what it means to be a researcher. Central to this profile is the attention paid to academic disposition and the research process. H3 is quite clear about this:

> In the end, at university it is all about picking up and imitating a critical attitude from me, learning to look at things critically, questioning things, meta-thinking.

The researchers function as role models by relating their own experiences and incorporating research practice into their teaching, for example:

> … the students see me thinking aloud. … I develop that knowledge at that moment and I show them how I do it. (C8)

4. Help to conduct research. The fourth profile focuses on helping students to conduct research. The teacher is like a tutor to the students and aims at academic disposition and broader research competencies. As L7 emphasises:

> You should not just impart knowledge to them, you need to teach them research skills as well, and you do that by making them do all kinds of things themselves, by making them do research.

The students are challenged by being given small research assignments. Additionally, they are invited to participate in the academic world in some capacity. The teachers use their own ongoing research in teaching. C10 suggests taking them to conferences:

> In the year before the conference I am organising with some colleagues, I run a research seminar for the students to prepare for the conference. The students can join me at the conference if they promise to participate actively in discussions.

5. Provide research experience. The fifth and last profile focuses on giving students research experience. The teacher's ongoing research is used as a teaching setting in which students are trained to become researchers and the teacher, as a researcher, profits from the work of the students. C7 puts it as follows:

> The ideal is of course that you are able to work with a group of students on the research you are currently occupied with. … It would be fine if the research group were as diverse as possible.

Furthermore, the teachers are a guide to the students, based on their expertises in the research topic and coaching competencies. To H9 this means:

> I am aware of the outline of what is to be researched; I also know exactly which questions are at stake. Furthermore I have a fairly precise idea of what materials need to be studied.

Table 1. Profiles of the research-teaching nexus.

Themes	Profiles				
	Teach research results	Make research known	Show what it means to be a researcher	Help to conduct research	Provide research experience
Orientation	Towards teaching: academic knowledge; Towards research: reflection	Towards teaching: academic disposition and divulge research	Towards teaching: academic disposition	Towards teaching: academic disposition and train researcher	Towards research: input of students; Towards teaching: train researcher
Approach	Learning about research: listening to researcher and literature reading; Inquiry learning: discussing	Inquiry learning: discussing and reporting; Learning about research: literature reading	Learning about research: listening to researcher	Inquiry learning: studying and reporting; Participation: academic world	Participation: teacher's own research
Curriculum	Disciplinary research content	Own research content	Own research process	Own ongoing research	Own ongoing research
Teacher role	Expert	Motivator	Role model	Tutor	Guide

Discussion

Here we discuss the relation between the five profiles and the dimensions identified earlier. The *orientation towards teaching*, included in all profiles, can be aligned with the intangible-tangible dimension (Neumann, 1992); *academic disposition* is considered intangible, while other *orientations towards teaching* are considered tangible. The theme *orientation* can furthermore be related to the dimension unidirectional-reciprocal (Griffiths, 2004), i.e., taking only the teaching part into account (unidirectional) or including the research part as well (reciprocal). The theme *approach* contains aspects of the audience-participants dimension (Healey, 2005). *Audience* is linked to learning about research and inquiry learning, while *participants* implies simulation and participation. However, we prefer to use the terms 'learning about research' and 'participation in research' in order to have positive names for both ends of the dimension. In the theme *curriculum* the content-process dimension (Healey, 2005) can be recognised; the focus can be on either *research content* or *research process*. The theme *curriculum* can also be aligned with the diffuse-specific dimension (Griffiths, 2004), indicating whether the *teacher's ongoing research* is at stake (specific) or research in general (diffuse). Not all profiles can be associated with the diffuse-specific dimension. The first of the five profiles could be considered diffuse, the fourth and fifth profiles specific, but the second and third profiles do rely heavily on teachers' own experiences as a researcher, but are not related to specific research projects. For that reason we suggest to split this dimension into a dimension general research-current research, in order to differentiate between research that is currently going on and research in general and a dimension disciplinary research-teacher's own research, in order to differentiate between research carried out by the teacher and research in the discipline carried out by others. So we end up with six dimensions that need to be considered when talking about linking research and teaching. Table 2 shows the positions of all profiles on these dimensions.

The profile *Teach research results* is the only one on the disciplinary side of the disciplinary research-own research dimension. This aspect characterises this profile as it is considered of the utmost importance that students learn about the discipline and, more specifically, about the results of the research in the field. From this notion positions on the other dimensions follow. The profile *Make research known* combines the focus on research content and general research (first profile) with a focus on both the tangible and intangible aspects (fourth profile). It relies heavily on the teacher's own research as an illustration of the research in the field. The profile *Show what it means to be a researcher* has its basis in the intangible nexus as perceived by the teacher and from this the positions on the other dimensions follow. The profile *Help to conduct research* is the only profile combining learning about research and participation in research. This characterises this profile as both participation, leading to a focus on current and teacher's own research, and learning about, leading to a unidirectional focal point in which the tangible and intangible aspects of the nexus are inextricably combined. The profile *Provide research experience* differs from the others by its singular focus on participation. Students participating in the teacher's research form the heart of this profile from which the other positions originate.

Methodological considerations

The interview method chosen for this research was unconventional. Instead of being asked about real situations the respondents were encouraged to describe their ideal

Table 2. Profiles related to dimensions.

Dimensions	Profiles				
	Teach research results	Make research known	Show what it means to be a researcher	Help to conduct research	Provide research experience
Tangible-Intangible	Tangible	Tangible and Intangible	Intangible	Tangible and Intangible	Tangible
Unidirectional-Reciprocal	Reciprocal	Unidirectional	Unidirectional	Unidirectional	Reciprocal
Content-Process	Content	Content	Process	–	–
Learning about research-Participation in research	Learning about	Learning about	Learning about	Learning about and Participation	Participation
Research in general-Current research	General	General	General	Current	Current
Disciplinary research-Teacher's own research	Disciplinary	Teacher's own	Teacher's own	Teacher's own	Teacher's own

images. A great majority of the respondents showed that they were able to discrimi-
nate between the real and the ideal situations, as became evident in the latter section
of the interviews where they described their real situation. Furthermore, in some cases
the respondents explicitly said that they were describing a Utopia and others even
asked the interviewer a few times whether it was still appropriate to describe their
ideal images. However, a small minority of respondents easily fell back into talking
about reality. These academics were then encouraged by the interviewer to distance
themselves from daily practice and again reflect on the ideal situation. So we may
conclude that most academics were able to describe ideal images and sometimes even
felt privileged in not being limited by institutional constraints for once. Therefore, the
images evoked came closer to desirable research-teaching nexus than in other types of
research.

Conclusion

The main goal of this study was to capture the variation in ideal images of the
research-teaching nexus held by academics in the humanities in order to gain an
understanding of the different ways in which the research-teaching nexus can be
shaped. We found that these various ways could be described in several profiles,
namely *Teach research results*, *Make research known*, *Show what it means to be a
researcher*, *Help to conduct research* and *Provide research experience*. The essential
themes for each profile were *orientation*, *approach*, *curriculum* and *teacher role*. For
orientation the central question was whether a profile is unidirectional (teaching prof-
its from research) or reciprocal. Another important theme was whether the focus
should be on knowledge, skills and/or disposition. In *approach* the question was
whether the focus was on learning about research and inquiry learning or on simula-
tion and participation. For *curriculum* the questions whether disciplinary research or
the teacher's own research and whether the focus should be on research content or
research process were important. Each profile had its own distinctive *teacher role*:
expert, motivator, role model, tutor or guide. As a final point, six dimensions need to
be considered when discussing the research-teaching nexus: intangible-tangible,
disciplinary research-teacher's own research, research in general-current research,
research content-research process, learning about research-participation in research
and unidirectional-reciprocal.

Implications

In this study we were able to distinguish several ways to arrange the diversity of the
research-teaching nexus. All categorisations and dimensions are in their own way
useful for academics to help them to rethink their teaching. The advantage of the
presented categorisation is that it excludes the non-preferred variants of linking
research and teaching. When one searches for powerful forms of the linkage, as
suggested by Hattie and Marsh (1996), the profiles distinguished in this study might
provide an instrument for educational developers and university teachers to determine
what they actually have in mind when talking and thinking about strengthening the
research-teaching nexus. Depending on personal insight or preferences these profiles
and their underlying dimensions could be used in several ways. Academics or depart-
ments might want to use the different profiles throughout their various courses,
depending on content or level; others might have a strong preference for one profile

because of their teaching conception or the traditions in their discipline. In our opinion it would be desirable to use many different ways of relating research and teaching, as the different profiles have different advantages for students and academics (Elsen et al., 2009). Most important, however, is that academics and other stakeholders in higher education decide what they want to define as the desirable way(s) of strengthening the link between research and teaching.

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