

**Faculty Conceptions of Academic Practice**  
**(Research-Teaching-Learning)**

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Research and teaching, the two core academic practices of the university, are often construed by faculty as mutually exclusive and fragmented, even incongruous, activities that have little overlap in practice (Colbeck, 1998). The metaphor of a “tightrope” has been employed to explain the fine line that faculty members—particularly those on the tenure track—must tread, in order to preserve the tenuous balance between research excellence and quality teaching (Wolverton, 1998). Indeed, there is an inherent ‘rivalry’ between these two practices which undermines their common goal of learning and the production of knowledge (Barnett, 1997; Barnett & Hallam, 1999; Light & Cox 2001). Even those who do view research and teaching as complementary activities often find integration difficult to achieve in practice (Rowland, 2000).

Several key constructs related to each of these core practices have been examined, including faculty approaches to and conceptions of teaching (Kember, 1997; Kember & Kwan, 2001; Prosser & Trigwell 1999; Samuelowicz & Bain, 1992, 2001; Trigwell, et al. 1999), faculty understanding of student learning (Prosser & Trigwell, 1999), faculty experience of the improvement of teaching (Mckenzie, Akerlind 2003) and faculty conceptions of research (Brew, 2001; Brew, 2003; Boud & Brew, 1999). Importantly, several studies have linked these constructs to one another, and to student learning outcomes (Kember & Kwan, 2000; Light et al. 2005). These studies investigate constructs associated with different academic practices. The current study seeks to investigate at an integrated construct of academic practice focused on the common goal of learning.

*Conceptions of Key Academic Practices*

We use the term “conception” to describe the ways in which someone experiences “something,” a phenomenon or practice. Pratt (1992) describes conceptions as “specific meanings attached to phenomena which then mediate our response to situations involving those

phenomena. We form conceptions of virtually every aspect of our perceived world, and in so doing, use those abstract representations to delimit something from, and relate it to, other aspects of our world.” The concept may express a general understanding of a given discipline (e.g. History) (Entwistle, 1997), or of particular practices such as essay writing (Hounsell, 1997), or creative writing (Light, 2002), or student learning (Marton, et. al.1993). It has also been used in a more narrow way to describe how students understand a particular topic or idea in a syllabus (Marton & Booth, 1997). We focus here on the application of this concept as a key descriptor of more general conceptions of experience and understanding; specifically, how a faculty member experiences or understands the practice of teaching in higher education.

Over the last two decades, how faculty experience teaching, in terms of both their conceptions of and approaches to teaching, has been a rich source of inquiry. Researchers have found two broad orientations of teaching (Kember, 1997; Prosser & Trigwell, 1999; Trigwell & Prosser, 2004), although there is some variation in the theory and description of each (Akerlind, 2003; Trigwell, 2003). The studies generally differentiate between faculty who view teaching as information transmission (IT), that is, a way for faculty to organize and passively transmit content and their own knowledge to their students, and those who view teaching as a means to facilitate conceptual change (CC), that is to help their students construct their own knowledge and world view. The former is generally viewed as a teacher-centered approach to teaching, while the latter is usually viewed as a learner-centered approach (Barr & Tagg, 1995). Significantly, several studies have further connected conceptions of teaching to student learning, demonstrating that student-centered conceptions and approaches to teaching correlate strongly with deeper student approaches to learning and improved learning outcomes (Trigwell et al. 1999; Prosser & Trigwell, 1999).

More recently, there have also been a number of studies exploring how faculty members conceive of research. In a recent study, Brew (2001) investigated the conceptions of research of 57 senior Australian researchers, identifying four qualitatively different ways in which they understood research. In the first, or domino variation, researchers viewed research as a series or list of distinct tasks (e.g. experiments, techniques, ideas, questions, activities, etc) that can be combined and synthesized into different meaningful patterns. In the second or trading variation, researchers emphasize their role in the academic community and the products of their research (e.g. publications, social networks, grants) that are created and traded in exchange for

recognition, prestige, or money. In the third or layer variation, researchers view research as an artistic process in which meaning is created, not discovered. In the fourth or journey variation, researchers view the data and research questions as integral to their life and career; they have been holistically transformed by the research itself. Here, learning and personal transformation are intertwined.

Much has been written about the seeming divide—artificial or real—that sets research and teaching apart as separate practices at the university. Yet, little has been done to connect research and teaching in terms of learning. This may be due partly to the failure to conceptualize faculty conceptions of research in terms of conceptions of learning. An exception to this can be seen in a developing study (Prosser, Martin, et.al, unpublished) that focuses on how academic faculty experience research and relate this experience of research to their experience of teaching. Since faculty are experts in their discipline, their learning and research converge at a very deep level. Rival conceptions of learning may compete within the faculty's experience of the wider construct of academic practice (the confluence of learning in both research and teaching) with implications for their understanding and experience of teaching. This study explores this question.

## **Research Methods**

### *Methodology*

This study takes a phenomenographic research perspective (Marton, 1981; 1988a,; Marton & Booth, 1997) to the investigation of faculty conceptions of learning in academic practice. The focus of phenomenographic studies is not on 'correct' or 'incorrect' conceptions, but rather on the the experience or conception of the phenomena. In contrast to an 'observational' or *1st order* perspective, phenomenographic research is an 'experiential' or *2nd order* perspective. As Martin & Booth (1988) explain;

In the first and by far the most commonly adopted perspective we orient ourselves toward the world and make statements about it. In the second perspective we orient ourselves towards people's ideas about the world (or their experience of it) and we make statements about people's ideas about the world (or their experience of it). (Marton1988b p178)

Phenomenographic studies focus on the different ways in which the meaning of a particular phenomenon is conceived or understood; or more precisely the variation in the ways in which key features or aspects of a particular phenomenon are experienced. Variation in the ways in which the phenomena is conceived is disclosed in terms of the awareness of each of the key features of the phenomenon identified. Conceptions vary in terms of how the key features of the phenomena are distinguished, indeed, in terms of the awareness of the different ways in which these key features can be distinguished and related – i.e. the awareness of potential variation in and between the key features. The aim of phenomenographic study is to identify these key features and map out the different categories of conception – ways of experiencing the phenomena in terms of the features and their relationships.

Methodologically, this has important implications. Phenomenographic research relies (although not exclusively) on direct in-depth interviews of the subjects who experience the phenomena. It also takes as its unit of analysis the experience (conception) of a particular phenomenon, not the individuals who experience it. In addition to looking at the data for key features of the phenomena within individuals' experience, the analysis focuses on the variation in that experience and the relationship between the key features. As such, the research looks at the data very carefully for the extent of discernment of the different features of the phenomenon being researched.

### *Participants*

Between 2003 and 2005, 28 full-time, tenure-track faculty members at a private research intensive university participated in a year-long substantive faculty development program in two separate annual instances of the program (12 and 16 respectively). All participants had nominated themselves for the program after receiving a letter from the university provost encouraging them to enroll.

At the start of the program, we interviewed all 28 faculty members concerning their attitudes towards teaching, learning, and research. Although one participant dropped out of the program in the second year when he could not reconcile several scheduling conflicts, we still used his interview data. Unfortunately, we excluded three other subjects from the study when taping errors precluded accurate transcription of their interviews (2 from the first year, 1 from the

second year). Complete interview data was obtained from 25 participants comprised of 18 men and 7 women. The faculty came from a range of disciplines, with 7 from medicine, 9 from science and engineering, and 9 from the humanities and social sciences.

### *FDP Program Design*

The FDP was designed to promote critical inquiry into teaching and learning among its participants. Throughout the academic year, participants must attend a series of linked events related to learning and teaching in higher education, including 4 faculty development workshops, an intensive two-day retreat, 6 dinner workshops, and 3 peer group meetings. In addition, participants must develop and share an evidence-based project related to their teaching, either by creating a new course or course component or revising an existing course or course component. Interested participants are made aware of program objectives and requirements before they formally apply to the program, and must submit a tentative project proposal in their application in order to be accepted into the program.

### *Instrument*

The interviews were semi-structured and open-ended, lasting on average about 40-50 minutes. Two members of the Center staff conducted all of the interviews. The instrument included ten questions designed to capture the relationships between teaching, research, and learning. Several questions aimed to elicit these conceptions directly, asking how the participants understood the relationship between teaching and research. Other questions focused on the relationship less directly, asking the participants to define learning or to explain how they learned within their disciplines. To contextualize these questions, we also asked participants to describe the courses that they usually taught. Focusing on one specific course, participants were asked to identify and describe course goals and expectations, teaching methods, and assessments. We followed up with less structured questions to probe for more information, to clarify initial questions or responses, or to refocus responses that had gotten off track. Such questions included, “Could you explain what you meant by that?”, “Can you give me an example?” The interviewers tried at all times to refrain from leading the participants’ responses.

We were also careful to keep questions about student learning and the professor’s research separate; we specifically did not want the interview to be a learning experience for our

participants, nor did we want their conceptions to be affected over the course of the conversation. We were concerned that making such connections explicit to our participants would taint the research data, having learned from Rowland's (2000) discovery that while "people normally used the terms teaching and research in a relatively unproblematic fashion, once some of them began to think of their academic activity in more specific detail, the two terms became much more closely intertwined" (21).

### *Procedure*

Interviews were audio-taped, fully transcribed, and analyzed in two phases. First, one of us read through the interview transcripts to isolate passages in which participants identified, defined, or described their experience of teaching, learning, and research, focusing on how the participants understood the relative connections among those domains. We then independently examined the condensed transcripts to note the emerging categories of description that could capture the variation. After comparing these categories, we agreed that four prototypical conceptions had emerged from the transcripts (for a full description see below).

In the second phase, we compared relative qualities or variance of the conceptions in order to establish key dimensions. We then recorded the data to categorize each of the participants. Throughout the process, we reviewed the transcriptions in their entirety to assure that quotations remained in context.

## **Findings**

### *Constructive Thematic Convergence*

Although we found variation in how faculty experienced the process and conduct of research (Brew, 2003), we, nevertheless, found a broad constructive thematic convergence in how faculty understood their learning with respect to their research. All participants agreed that their research was a learning experience for them. Additionally, their accounts were remarkably uniform in portraying their own learning as a deep process aimed at understanding, knowledge production, making connections, working with peers, asking questions, doing experiments, etc. This was evident despite discipline, type of research, or scholarship.

*It's hard to differentiate research and learning because to do research you have to look into some new ideas to solve the problem and at the same time you need to know what other people are doing. Research is a cycle. In the beginning you learn about the state of the art...ok people have done this, this and that and this is the problem we need to solve. Then you go back and think about that and come up with some solutions.*

(Computer Science)

*As far as the learning process of research, I just keep asking questions that people don't seem to know the answers to and that is guiding me towards a focus on areas that will be interesting to explore and it would hopefully be valuable to understand better*

(Journalism)

*... [W]e are constant learners. ... We ask ourselves a lot of questions - "what if we know this?" or "what if we know that?" Then we design an experiment around it, we build and test our hypothesis. If it turns out to be right and we are happy with it then we check the literature to see if there is a precedent for it. ... We get feedback from other people ...*

(Chemistry)

Common to all faculty accounts is an understanding of learning as a constructive process of asking questions, addressing problems, making connections with personal experience, and drawing on existing knowledge. This finding provides the conceptual background for understanding the variation in their conceptions of academic practice.

### *Conceptions of Academic Practice*

Our analysis disclosed four types of faculty conceptions or experience of the relationship of learning, teaching, and research in academic practice (see Table 1 below). These conceptions are characterized by three distinct features—one 'learning' feature and two 'practice' features—that fall into two broad categories: disconnected conceptions and connected conceptions. The connectedness of the conception or experience is mainly related to the learning feature which describes the variation in the ways in which faculty understand the relationship of their learning in the research context to the way they understand student learning in the teaching context.

In the disconnected conceptions, faculty understanding of their learning (in research) and student learning (in the teaching situation) is fundamentally different. Unlike their experience of learning in the research situation as active, personal, problem-focused, making connections, they tend to regard student learning as more passive, impersonal, and focused on the acquisition of facts, content and abilities. Their overall experience of learning of one aspect of their academic practice is detached from their experience of the other (Type I), although in some cases there is a recognition of a learning resemblance in the research and teaching situations, it is regarded as incidental (Type II). It should be noted that this experience of detachment in learning is typically seen as being with undergraduate students. The detachment in experience is between faculty/graduate research students on the one hand and undergraduate students on the other.

In the connected conceptions, on the other hand, the overall experience of learning is integrated across faculty academic practice. Faculty regard the process of student learning as very similar to their own: active, problem focused, concerned with making connections. Learning is experienced as fundamentally the same in both the research and teaching situations (Type IV), although in Type III conceptions faculty see student learning going through a more passive acquisition stage in class before integration with the learning of the research situation.

The practice features describe the variation in the ways in which faculty experience the relationship between research and teaching from two perspectives. The first perspective looks at the different ways in which faculty view research practice informing teaching practice, and the second concerns variation in the ways in which they see teaching informing research practice. In the disconnected conceptions, faculty regard the practices as entirely separate activities with minimal or no content overlap (Type I), or as providing some material, structure or ideas, but strictly at the content level (Type II).

In the two connected conceptions, however, faculty experience a much more dynamic relationship between their teaching and their research. The focus of the relationship goes beyond content towards the promotion of critical thinking. And this process can happen two ways: problems and questions from research raise issues for critical thinking in class, and questions/ideas raised in class provide material for re-thinking ideas in research (Type III). Where in the third type of conception faculty regard this sharing of ideas, problems and thinking as important, the awareness of this sharing happens accidentally and the potential is then recognized and developed. Type IV conceptions are characterized by a much more intentional

sharing and integration of the activities common to the two practices. Faculty intentionally take models, values, and philosophy from their research and bring them into their teaching to encourage students to think and learn as researchers and scholars do in their discipline. Similarly, they will construct interactive sessions in class to stimulate and raise new ideas and questions in their research.

**Table 1: Conceptions of Academic Practice (Learning, Teaching, and Research)**

DEFINING FEATURES	Disconnected CONCEPTIONS		Connected CONCEPTIONS	
	I	II	III	IV
<b>Learning</b>	<i>Detached</i>	<i>Detached</i>	<i>Integrated</i>	<i>Integrated</i>
Undergrad & faculty	Learning is different (passive for students; active for faculty)	Learning is different (but accidental resemblance)	Learning is similar but there is an initial passive stage for students	Learning is similar (active for both)
<b>Practice</b>	No research used in undergrad teaching; or provides minimal material from research	Provides only material/content from research for the syllabus or helps in structure of syllabus	Raises problems and questions from research in the teaching situation to promote critical thinking	Provides research values/philosophy as well as problems and questions to promote and model critical thinking in the discipline.
<b>How research informs teaching</b>	<i>Content-focus</i>	<i>Content-focus</i>	<i>Thinking-focus</i>	<i>Thinking-focus</i>
<b>How teaching informs research</b>	Teaching doesn't inform research; preparation might remind researcher of content not seen in a while	Teaching provides new research material/content and questions researcher had not seen before	Interaction with students <i>unintentionally</i> provides new ideas/ content and helps re-think research questions	Interaction with students structured to <i>intentionally</i> raise new ideas/content and help re-think research questions

*Disconnected Conceptions:*

*Conception I:*

In this conception, faculty regard student learning as detached and substantively different from their own learning. Unlike their own more problem-focused, deeper experience of learning, faculty regard student learning as fundamentally a process of acquiring course content (information, ideas, facts, concepts, practical abilities).

*The very basics (of student leaning) is knowing something you didn't know before or understanding a process that you didn't know before. It has to deal with gaining knowledge or an ability that you didn't have before. [...] There is formal and informal teaching. Any time you are conveying information is teaching. Formal teaching is when there is somebody whose job it is to convey information and that is what I do. (Pediatrics)*

The separation of student learning from faculty learning appears to turn mainly on the idea of research as learning. This detachment at the core of the experience of learning in research and teaching is not simply disclosed as one between teacher and undergraduate, but is often reported in terms of the way in which the faculty member understands the distinction between graduate student learning and undergraduate student learning. A Linguistics professor, for example, reports how he sees research and teaching more integrally related at the graduate level, than at the undergraduate (“classroom”) level:

*Certainly the whole point is to get them [grad students] involved in research. If they don't get exposed to that it will be hard for them later on in academia. It's the best learning experience in general. Research should be teaching for it to work itself but that doesn't work so well in class rooms [undergrads]; its more the close relationship between [grad] students and their advisors that gets them to experience that. [With undergrads] I can always pretend that we are exploring the field, of course, like with home works and things. It can't be just raw research, it has to be prepared and organized in some other ways. It's not the same kind of discussion that we have with [grad] students. The point of teaching is to enable them [grad students] to get involved in research; that's what they do in the first couple of years and it should be all about research. (Linguistics)*

Teaching graduate students is different than teaching undergrads in terms of the learning expectations and the nature of learning. The key distinction between grads and undergrads focuses around the idea of research. Grad student learning is regarded as the ‘best learning experience’, focused on research. It is regarded as a process of ‘raw research’ of a real exploration, and contrasted with undergrad learning which is at best ‘pretend exploration of the field’ the suggestion being that the latter is organized in other, non raw, non real or non authentic, ways. Even the way the teacher discusses and thinks about the content with undergraduates is qualitatively different than the way he or she interacts with graduate students. The learning from research as exemplified by the teacher and his graduate students is regarded as a very different kind of learning from that of undergraduates.

With respect to practice, faculty with type I conceptions report that their research does not inform their teaching at all or provides minimal content. Similarly, they report that their teaching does not inform their research to any great extent, except to remind them of material they had not seen recently.

*“I don’t have a strong connection between [teaching and research] and maybe because of that I don’t necessarily feel that there is a strong inherent link between the two. I see that there could be positive externalities between the two and certainly teaching the material has made it easier for me to think about my own writing in clear ways. But, I feel the two are really quite separate tasks.”* (Political Science)

### *Conception II*

As with the previous conception, Type II conceptions are also characterized by a detached or conflicted understanding of learning. They, too, reflect a separation between how the teachers experience their own learning and how they view the learning of their students (undergraduates). Student learning is, again regarded as primarily acquisition. As this Engineering professor reports, teaching is “conveying knowledge to students” and student learning is defined as:

*“Receiving knowledge, but ideally also being capable of using it to synthesize new related ideas. There are specifics in teaching in my opinion, but true learning involves taking those specifics and being able to make generalizations based on them. [...] The only difference is that they are not picking their topics because I am picking their topics*

*for them and I am providing them with the theoretical underpinnings and working them through some specific examples and then they have to take that knowledge and apply it to a different example in the labs and homework. (Engineering)*

There is, however, a recognition or awareness here that student learning goes beyond the basic reception of information to making generalizations and applying the information in different examples, which bear some “fuzzy” but limited similarity to the learning of the teacher (and grad students).

*“At the undergraduate level, there’s more of an expectation of guidance, but in my research there is no guidance; it’s all self directed. It’s appropriate that undergrads do have guidance. There’s a fuzzy boundary there. In one of the cases [students] there was a lot of direction involve, almost all external [from teacher], and in the other case [faculty] the direction in almost all internal.” (Engineering)*

Student learning is still regarded as passive, externally directed by the teacher, and distinguished from more active, internally or self-directed faculty learning. Furthermore, unlike the first conception, academics in this category do report a real relationship between their research and their teaching. This tends to show itself both with respect to their research on their teaching and also to their teaching on their research. The influence in both cases is often somewhat limited and primarily understood at the level of content and structure in their teaching. In the case of the former, for example, faculty research is brought into the undergraduate class but consists of relating research content - from the researcher or from others notable researchers - to the class syllabus.

*There are a lot of topics touched upon [in the course] ... that I have done some work on in the past. I have changed the course a bit based on conclusions I have drawn in my research....In the past those were not taught in this class but I am convinced based on my research that they are going to be useful in the future. I didn’t totally change the course based upon this but I did start introducing the topic and teaching students a bit about it. (Engineering)*

*“One of the great things we do every time this quarter is that this week we have the announcement of the Nobel prizes. The great thing about the Nobel committee is that they pull in the names and I teach all that stuff in my chem. class. It takes me ten minutes and the end they have all been exposed to these people who have worked on this stuff and have won a prize and this is what it means. These are the concepts that we currently cover that feed directly...so absolutely they are directly related...if you don't choose to do that you go to national lab typically.” (Chemistry)*

In both these classes the focus is on research as content, whether that content originates from the teacher's own research or is related to research practice conducted at very high (Nobel Prize) winning levels. There is no apparent awareness in this research-teaching relationship of providing students with research experience or with the experience of inquiry and discovery which is central to the teacher's own learning.

This conception is similarly characterized by an awareness of the impact or influence of teaching on research, although it is recognized almost accidentally and, once again, with respect to the provision of new ideas, material and/or questions.

*“When I teach in each of the courses, I define the constraints that I am working with or have the basis of that. Even though it has so many concepts, the fact that they [students] have no pre concepts, lets them question the way you approach things. This makes you think twice about their questions and the way it's always been done.” (Computer Science)*

*... sometimes lectures that I give are actually part of my research interest. Teaching or talking about things might actually instigate some thoughts about how things are done. I think they are connected. (...) Teaching makes you synthesize the knowledge, sometimes there's gaps in knowledge that you cannot explain which kind of makes you think about things like “why it was done that way?” and “why they behave that way” and that gives you ideas for research. Teaching is a passive way of acquiring knowledge but it can lead to active research. (Linguistics)*

In contrast to the first type of conception in which the teacher experiences learning in one aspect of academic practice as fully detached from their experience of learning in the other, conceptions of this second type are characterized by a nascent awareness of a resemblance between the learning in the teaching situation and of learning in research. This relationship, in both the influence of research on teaching and the influence of teaching on research, is however, primarily focused on the content of the research/teaching experience. In one case, there is awareness that the teaching situation raises research questions and ideas for the researcher and in the other, awareness that research practice may provide material for teaching in the class.

### *Connected Conceptions*

#### Type III

Faculty holding Type III conceptions of academic practice are characterized by their awareness that undergraduate learning in the teaching situation is generally the same as faculty learning in the research situation. Student learning is regarded as an active process (like the learning they describe in conducting their research) although in Type III conceptions, knowledge/skills and higher level thinking are only developed after a more passive prior stage.

*Part of it is skill or rote knowledge to the extent that a student learns the basics first, sort of stepping stone. ... They learn the basics first to get the skills concept but then they begin to take ownership of the learning process. They begin to get excited about their own ideas about the material as they are learning the materials and having some lecture that works them through different concepts. ... The learning process begins with a kind of an introduction to material that involves a certain amount of experimentation and practice and it moves toward a sense of mastery and ownership of the material”*

(Journalist)

Faculty holding this conception also report that in addition to providing content and structure to their teaching, their research also provides them with questions and problems to promote active ways for students to engage with that material.

*“Oh I think they [research and teaching] are integrated, so for the classes its pretty obvious. I could take the stuff I do in my lab and they can design little projects which they did in the course and which they will do next year as well. We’ll always use real world examples when you’re teaching; otherwise they don’t think it’s really relevant to them.”*  
(Chemistry)

Furthermore, teaching is also regarded as a fertile area for research. Interaction with students is often (if unintentionally) instrumental in faculty re-thinking their own research questions and ideas.

*“That’s one of the greatest things about having students. They come in with completely new perspectives and they are not ... I can be quite fossil in my way of thinking about problems and they would come in ask and realize something that I have...because I am so fixated on looking at one particular direction they would come in from a completely different direction. I try and work with them to develop ideas that are not related to my own research. I want to send them off to do their own research; I think that works both ways.”* (Linguistics)

#### Type IV

In Type IV conceptions, faculty experience of learning is fully integrated. There is an awareness that the nature of student learning (in the teaching situation) and faculty learning (in the research situation) are essentially the same. Faculty with these conceptions regard the teaching situation as one in which the learning experience should be active, personal, connected and problem focused. Faculty do not see this as a staged process in which students passively acquire information and knowledge and then more deeply engage with it (as in type III conceptions). Instead they regard student learning as an active process in which knowledge and understanding are simultaneously constructed.

*As a teacher I set up learning [activities] so that those various learning styles and preferences, each person is given an opportunity through some of the challenges that I pose in the class room in their learning experiments to explore a concept in their own way and come to construct an understanding. There has to be some relevance, I have to*

*think about where my students come from, what are their past experiences and how can I build on those past experiences. ... We explore it [the topic] in different ways then they begin to form that whole understanding, pieces start to come together, a concept of what music education is. It's setting up experiences for them so that they can build that conceptual understanding. (Music Education)*

*Its not just acquiring more knowledge but it is having to see a fuller sense of the function of that knowledge. What do things mean or don't mean, how they relate to each other and the context in which they function. I see teaching and learning as being intimately linked and interrelated. [...] In my literature class, they are reading the information, putting it together with what they already know and then when they come to class we engage in the dialogue that unlocks doors both for them and for me. ... they are reflecting or contemplating; presenting critiques and advising; and moving farther and farther out in terms of exploration and synthesizing to some degree. (English)*

As in conception III, faculty holding type IV conceptions also understand the practice of research and teaching as connected. Teaching is experienced as informing and being informed by research at a level which goes beyond the simple sharing of content. Unlike type III conceptions, however, faculty intentionally integrate their research and teaching in their interactions with their students. Faculty view their research, for example, as not merely providing rich questions and problems but also as promoting research-based models, and philosophies for engaging those questions.

*“ Because of the nature of my research which is related to music education, the findings that I uncover work their way into lessons. When students see that it's been systematically investigated by myself they begin to say “wow, I am hearing this information directly from somebody doing the research at this moment”. It hits them more powerfully than if they read something from a researcher they know nothing about. There's that immediacy and connection. It makes for interesting story for them. It is important because of my philosophy that research and teaching are so closely linked so I share those values with my students. It is important to think as an investigator when you are out in the class rooms.” [Music Education]*

Similarly, they experience the active learning environment they want to establish in their course as potentially having a real influence on their own research and scholarship and they construct it with this understanding in mind.

*“...in my undergraduate class ... we’re trying to come up with a case study game for them to play, and its basically UPS wants an answer to this problem, so we have, needing to answer UPS’ problem but then also figuring out if its possible for the undergraduate students to do that, the class is in the winter, so we’ve been starting this fall to develop this, we call it the outsourcing game and coming up with this whole framework to get the students to give UPS the answer that they want, so that’s been kind of neat. And it’s cool because it funds my grad student and he’s enjoying working on it.”* (Industrial Engineering)

*“I think a lot of creative writers see teaching as antagonistic to great creative writing because play writing is collaborative but fiction is solitary. I try to ask questions in my courses that are benefiting my students but also are benefiting me as a writer as well.”* (English)

### **Conclusions/implications**

While the disclosure of a ‘general convergence’ in faculty experience of research as a sophisticated, rather deep learning experience is not surprising, it is important to recognize both the character of this core aspect of their overall academic work and its apparent ubiquity among faculty.

The findings provide preliminary evidence for a qualitatively distinct set of four conceptions of academic practice. The main difference between these conceptions rests in the integration (or detachment) of learning within the overall experience of academic practice. In the disconnected conceptions, there appears to be an important and critical gap in the very understanding or experience of learning at the heart of the two practices comprising their main academic work. It is a gap which, under the pressures of time and status confronting faculty in research intensive contexts, suggest not merely a quantitative “rivalry of learning” (Light & Cox 2001) between the

faculty's research agenda and their teaching responsibilities, but perhaps a more disquieting qualitative rivalry embedded within an academic's experience and understanding of arguably the most important construct in academic work: learning. In addition, the qualitative distinction appears to manifest itself in detached academic practices to the potential detriment of students and possibly the faculty.

Preliminary findings suggest that encouraging faculty to reflect on the relationship of their own learning to their students' learning might be an important component of programs designed to help faculty develop more sophisticated approaches to their teaching.

The faculty participating in the research were selected for their commitment to both teaching and research but, it should be noted, the sample was not necessarily representative of faculty as a whole. This group consisted of junior, tenure-track faculty who had volunteered to engage in a faculty development program. The point, however, was not to obtain quantitative data profiling the university as a whole but rather to reveal an outcome space of distinct conceptions of academic practice in the university.

Distinctions within this 'academic practice' construct, between content-focused, disconnected conceptions and thinking focused, connected conceptions, suggest relationships with similar distinctions characterizing approaches to teaching constructs (Prosser & Trigwell 1999). This relationship needs to be tested empirically, but the preliminary implications may be that supporting faculty to develop more sophisticated approaches to teaching might consist, in part, in developing programs encouraging faculty to reflect on the relationship of their own learning to the learning of their students. An integration of the experience of learning at this level, indeed, might contribute to a more integrated understanding of the core academic practices of the university.

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