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## Crossing Thresholds: Identifying conceptual transitions in postsecondary teaching

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# Crossing Thresholds: Identifying conceptual transitions in postsecondary teaching

## Abstract

In this paper we report on research we conducted to begin the process of identifying threshold concepts in the field of postsecondary teaching. Meyer & Land (2006) propose that within all disciplinary fields there seem to be particular *threshold concepts* that serve as gateways, opening up new and previously inaccessible ways of thinking and practicing. We developed a series of questions focusing on the “troublesome” and “transformative” characteristics of threshold concepts and asked these questions of several constituent groups, including those who are new to practice and the body of knowledge in postsecondary teaching and those who are already knowledgeable and/or experienced in the field. Based on our interpretation of participants’ responses, we identified four recognized concepts in the field of postsecondary teaching as potential threshold concepts in this field: Assessment *for/as* learning; Learning-centred teaching; Accommodation for diversity; and, Context-driven practice. Our findings suggest that threshold concepts are relevant to the field of postsecondary teaching. Through this work, we hope to help educational developers and faculty members consider what is involved in learning to teach and developing teaching expertise, and to encourage critical discussion about the teaching development “curriculum” in postsecondary settings. Threshold concepts arise as a field develops and are defined as practitioners and scholars in the field define their field. At this stage, we believe the real value of threshold concepts for postsecondary teaching lies in the discussion that arises in the process of identifying and naming the concepts.

Cet article se penche sur le développement de l’enseignement post-secondaire à partir des concepts de seuil. Meyer et Land (2006) suggèrent qu’au sein de tous les champs disciplinaires, il semble y avoir des concepts particuliers qui servent de passerelles et qui ouvrent la voie à de nouvelles manières de penser et de pratiquer jusque là inaccessibles. Les concepts de seuil représentent une manière transformée de comprendre ou de regarder les choses, sans laquelle l’apprenant ne peut pas progresser dans ce champ. Cette vision transformée peut refléter les valeurs de la discipline ou encore résumer la manière dont les experts dans cette discipline abordent les problèmes. Dans cet article, nous présentons un rapport sur notre tentative d’identifier les concepts de seuil en enseignement post-secondaire. Grâce à ces travaux, nous espérons faire avancer les connaissances en enseignement et en apprentissage et aider les conseillers pédagogiques et les professeurs d’université à prendre en considération ce qui est impliqué dans l’apprentissage de l’enseignement. Nous souhaitons également encourager la discussion critique sur la préparation des programmes d’études de l’enseignement et montrer comment s’y prendre pour aider les autres à apprendre comment enseigner dans un milieu post-secondaire. Nous sommes impatients de partager nos résultats préliminaires et espérons engager d’autres personnes dans ce processus d’identification.

## Keywords

educational development, threshold concepts

Although we do not normally call postsecondary teaching a “discipline”, it can be described as a viable field of study and practice. A body of knowledge about learning and teaching, established by scholars in this and related fields and expanded through the continuing contributions of scholars and practitioners, can be shared with beginning teachers. There are theoretical frameworks, principles of practice grounded in sound research, and critical debates about values, purposes and outcomes (Entwhistle, 2010; Nilson, 2010; Parker, Zajonc & Scribner, 2010; Weimer, 2013). All this and more appears in the literature, published in recognized journals and academic presses, which teachers may use to inform their practice. Teaching centres have been established at most universities (Britnell et al., 2010; Evers & Hall, 2009; Ives, McAlpine & Gandell, 2009), with the mandate to educate both novice and experienced university teachers about effective practice. Presumably, such units are expected to draw upon the body of knowledge in this growing field, to design appropriate educational experiences for developing teachers. Many have chosen to engage their faculty constituents in the scholarship of teaching and learning, thus learning from and contributing to the literature at the same time (Knapper, 2010; Weston & McAlpine, 2001). And many teaching units and/or schools of graduate studies offer a credit course on teaching and learning in higher education, with a curriculum that reflects an acknowledged and for the most part agreed upon body of knowledge (Schönwetter, Ellis, Taylor, & Koop, 2008). All of this activity suggests that postsecondary teaching is recognized as a legitimate field of educational practice and scholarship.

### **Educational Development as a Transformative Learning Experience**

Postsecondary teaching is a conceptual as well as practical activity. Teaching is not a simple matter of doing; it is also about the why we do what we do. Learning to think like a teacher allows us to act like a teacher. Educational development, the improvement of teaching and learning, has been described as a transformative learning experience (Cranton, 1994). Teachers’ concepts of learning, and ideas about what it means to teach and be a teacher will change with experience and reflection; some of those changes in perspective can be dramatic, offering entirely new ways of understanding learning and teaching. Since our perspectives shape the approach we take to action in the world, perspective transformation among teachers can have a significant impact on teaching practice, although the effect may not be immediate or in direct correlation.

As we plan educational development programs, and consider what to include in these programs, we appreciate that not all content or ideas are created equal. We believe there are ways of thinking about teaching and learning which are particularly worthwhile, and it is those ways of thinking we want to share with teachers in hopes that thoughtful engagement with these ideas will make a difference to teachers. Educators need to know: What are the concepts/ideas which are transformative? What are the concepts/ideas that are catalysts for change? What are the concepts that must be included, concepts without which development cannot fully occur? These distinctions must be made as we organize and structure a “learning to teach” curriculum that will have a positive impact on teaching practice.

## Threshold Concepts

In higher education settings, note Meyer and Land (2003), teachers have wondered why certain students “get stuck” at particular points in the curriculum, and why certain concepts within disciplinary fields appear “troublesome” to students. They propose the notion of threshold concepts as a means of addressing such concerns. According to Meyer and Land (2005) threshold concepts define the characteristic ways of thinking and practicing in a discipline, and as such serve as critical portals in the development of a learner’s understanding of a subject. Once a threshold concept is understood, a student experiences a transformed internal view of the subject matter and can then move on. This is not to suggest that “moving on” is easily and quickly accomplished once the threshold concept is clear, only that learners are unable to move forward unless and until that particular concept is grasped. Often, learners must then undertake significant cognitive and emotional work in order to deal with the implications of the newfound understanding.

Not all concepts identified as fundamental or core to a disciplinary field are threshold concepts. According to Meyer and Land (2003), a threshold concept is likely to be:

- a. *Transformative*. Understanding leads to a “significant shift” in the learner’s perception of a subject, which may involve a performance element (skill) and/or an affective component (values, feelings or attitude). In some cases/subjects, the shifts may result in a transformation of personal identity. The underlying premise is that all learning is change, but not all change is perspective transformative. The transformative impact of threshold concepts is explored further in Meyer, Land & Baillie (2010).
- b. *Troublesome*. Approaching and passing through the threshold is troublesome and troubling. It requires significant intellectual effort and the growing new understanding may be personally challenging...threshold concepts are sometimes encountered and grasped in a sort of eureka moment, but also frequently are sighted and rejected on several occasions and only gradually accepted, if at all. (Bradbeer, 2005, p. 3)  
The concept may be troublesome because it may be alien, tacit, counterintuitive, subversive, or conceptually difficult (Perkins, 2006).
- c. *Irreversible*. The concept is unlikely to be forgotten and more or less impossible to unlearn. Accordingly, an expert in a subject may have a very difficult time remembering what it was like to think like a novice.
- d. *Integrative*. The concept, once acquired, exposes the previously hidden interrelatedness of a set of concepts, beliefs and theories in the field, and helps students to integrate and reinterpret their prior learning.
- e. *Bounded*. The concept delimits the boundaries of the field/subject, denoting what is unique and characteristic of the field, and/or defines the scope of the academic community in the field.

The above five qualities are those commonly associated with threshold concepts in the literature. Land in 2008 accentuates, in addition, that threshold concepts are:

- f. *Re-constitutive (of self)*. The shift in perspective involves a shift in the learner's subjectivity, a repositioning of self in relation to the subject.
- g. *Discursive*. The shift in perspective is accompanied by (or occasioned through) an extension of the student's use of language, providing them with a new way of talking about the concept.

These last two points emphasize the inter-relatedness of the learner's identity with thinking and language. Threshold concepts lead not only to transformed thought but to a transfiguration of identity and adoption of an extended discourse (Meyer & Land, 2005).

Given the troublesome nature of threshold concepts, success in acquiring an understanding is not ensured. Meyer and Land (2006) propose that "Difficulty in understanding threshold concepts may leave the learner in a state of liminality, a suspended state in which understanding approximates to a kind of mimicry or lack of authenticity" (p. 16). As educational developers, we note that this seems to describe the current state of teaching practice among a disproportionate number of our colleagues, and wonder whether we might do better in helping faculty develop a deep understanding of significant concepts in teaching and learning.

Most academics are able to identify potential examples of threshold concepts in their own disciplines such as: opportunity cost (economics), choice (sociology), culture (anthropology), precedent (law), depreciation (accounting), equal temperament (music), momentum (physics) and limit (mathematics), and irony (literature). However, we are not aware of any work in the literature identifying threshold concepts in the field of postsecondary teaching, nor have we participated in any informal discussions with our colleagues regarding threshold concepts. There seems good reason to begin this conversation. Threshold concepts can serve as a tool for analyzing the development of knowledge and practice in particular disciplinary fields, and are a promising way of interpreting the learning demand presented by subjects (Davies, 2003). Once threshold concepts are explicitly articulated, they may be embedded in the curriculum for learners in a field. Believing that we had found an approach to begin to tease out those concepts that make a difference in the educational development process, we planned a preliminary investigation.

### **Purpose**

The research project we report on here was focused on identifying threshold concepts in postsecondary teaching. Our purpose was to examine whether the notion of threshold concepts has relevance/applicability in the field of postsecondary teaching. More specifically, we wanted to identify some concepts if possible, so that we might discuss these with other educational developers and initiate the process of establishing threshold concepts in the discipline. Ultimately we wish to take advantage of threshold concepts in planning educational development initiatives for post-secondary teachers.

### **Method**

To start in on the identification of threshold concepts in postsecondary teaching, we developed a series of questions focusing on the "troublesome" and "transformative" characteristics of threshold concepts as described by Meyer and Land (2003, 2005, 2006). Heeding the reported experiences of threshold concept researchers in other disciplines (Davies,

2003; Lucas & Mladenovic, 2006; Taylor; 2006), who have discovered that the input of both learner and experts are helpful in this process, we asked these questions of several constituent groups, including those who are new to practice and the body of knowledge in postsecondary teaching and those who are already knowledgeable/experienced in the field. We were interested in individual responses and in whether there was some agreement within and across constituencies about the experience of “coming to know” teaching. We did not directly ask, or expect, respondents themselves to identify particular concepts as threshold concepts. We simply wanted to engage them in reflective thinking about learning to teach, so that we might then analyze their responses and in that way begin to pinpoint some potential threshold concepts. Out of our concern for transparency, we provided study participants with a brief written description of threshold concepts, and explained that, the goal of our study is to identify threshold concepts in postsecondary teaching. This will lead to a better understanding of what is involved in learning to teach.

A total of 29 beginning teachers (either graduate students or new faculty members) were targeted to reflect on their learning in one of two programs, a graduate course on university teaching and learning, or an intensive course design and teaching workshop. Both programs were approximately 30 hours in length, led by experienced educational developers, and were designed to introduce novices to the theory and practice of university teaching. Both focused on helping teachers to develop a deeper understanding of learning and establish an effective approach to teaching. At the conclusion of each program, 19 of the 29 teachers agreed to anonymously participate in our study by responding in writing to the following two questions:

1. Were there any concepts in this program that you struggled with or found unsettling given your previous understanding of teaching & learning? If so, please describe the things (ideas or approaches) that troubled you. (Response code: A)
2. Did any of the concepts introduced in this program reshape your conceptions of teaching and learning and help you take a new approach to teaching? If yes, please describe the concepts/ideas that made such a difference to you. (Response code: B)

Three educational developers who were involved in one or both of the two programs for beginning teachers were asked to reflect on participants’ learning in the programs. The three educational developers responded anonymously in writing to the following two questions:

1. Were there any concepts in this program that participants struggled with or found unsettling, given their past experiences of teaching and learning? If yes, please describe the things (ideas or approaches) that seemed to trouble them. (Response code: A+)
2. Did any of the concepts introduced (in this program) reshape participants' conceptions of teaching and learning and help them take a new approach to teaching? If yes, please describe the concepts/ideas that seemed to make such a difference. (Response code: C)

Finally, we identified five master teachers (i.e., experienced faculty, formally recognized at their institution for their accomplishments as teachers) who we asked to do the following:

1. Reflecting on your experiences as a teacher, and answering any or all of the following question(s) to the best of your ability. Formal or sophisticated language is not necessary – just write what comes to mind when you reflect on the question. We are not looking for particular answers, rather we are wondering how experienced teachers might respond to these questions.

All five master teachers agreed to participate and responded anonymously in writing to the following three questions:

1. What key shifts in thinking can you identify in your own development as an educator? In other words, can you recall times when you began to see (think about) teaching and/or learning in a new light? If so, please describe the change(s). (Response code: D)
2. What key concepts (theories, ideas, principles) about teaching and learning enable you to respond effectively to a variety of teaching situations and use a range of teaching strategies constructively? (Response code: E)
3. If you have any experience working with other teachers (beginning or experienced), what ideas about teaching and learning have you introduced (or seen) that seemed to shape these teachers' understandings of what teaching is all about? (Response code: C)

Members of the master teacher group and the educational developer group may both be considered as disciplinary experts in the field of postsecondary teaching, although one group was more likely to have established their expertise primarily through experience, while the other tended to have formal education related to the field.

We acknowledge that recognizing threshold concepts is not a simple matter (Davies, 2003), and that paying too much attention to the immediate responses of beginners and experts to several simple questions could be problematic. It is, however, a useful starting point, a means of uncovering those concepts which might warrant further and more critical investigation. Davies and Mangan (2005) have explored different approaches to recognizing threshold concepts in economics.

To simplify analysis, all responses to each question were coded according to the question asked (i.e., A, A+, B, C, D, or E as indicated following each question listed above) and the source of the comment (i.e., master teacher, MT 1-5; student, S 1-18; new faculty, NF1; or, educational developer, ED 1-3). For example, the fifth response to question D, provided by the second master teacher, was coded: D5MT2. All responses were then combined into a single pool of responses for analysis by emic themes: common themes that emerged from the responses were identified and individual comments were then sorted by theme. Finally, we made an attempt to identify potential threshold concepts related to each theme, using Donald's (2002) definition of a concept and Meyer and Land's (2003) descriptors of a threshold concept (i.e., transformative, troublesome, bounded, integrative and irreversible). Our approach to analysis, which arose as we worked with and through the data, is explained in further detail in the results section.

## **Results**

When asked to identify unsettling or troublesome concepts that they had been exposed to teaching development programs, not all beginning teachers were able to respond in ways that were immediately helpful. For example, one doctoral student responded, “The ‘ethical principles in university teaching’ discussion was unsettling” (A5S11). Further exploration of this response would be required to determine why it was unsettling, and what understanding of practice it challenged. Other beginning teachers responded more directly, for example one graduate teaching fellow found it troubling that, “different disciplines use different methods of teaching for learners to gain knowledge and skills, and even different people can use different methods for their personality and subject” (A6S12), and another wrote that he/she was disturbed by “at first, the whole ‘student-based’ learning approach” (A8S17). Respondents had a tendency to identify as unsettling some of the values that they were exposed to, rather than academic concepts, per se. For example two noted that they found it disturbing to accept the “lack of awareness among postsecondary teachers regarding teaching methods, and philosophies” (A2S16), and “how poorly university education is delivered” (A2S4). Educational developers, who were asked to identify concepts that beginning teachers found disturbing, echoed the teachers’ response, one (for example) reporting that the novices were “equally disheartened and angry that, despite what’s available through the literature, they don’t notice a lot of ‘teaching for learning’ going on around them” (A<sup>+</sup>2ED1).

Beginning teachers responded positively and explicitly to the question of whether they had been introduced to concepts that reshaped their ideas about teaching and learning. One stated that “the discussions on personal learning styles, what worked and what did not work, were a bit of a surprise to me” (B4S2). Another identified “the importance of engaging and motivating the students in the class and trying to connect with them” (B6S9). Other responses showed how concepts interacted with professional identity:

I always limited myself because I saw teachers as people who were born with the charisma and skill to act in front of a large group of people. I see now that we define ourselves as teacher, based upon our personalities and the needs of our students. (B1S15)  
I have completely changed as a teacher (and even as a learner). Bloom’s Taxonomy and ICE [a framework for assessment] helped me as a student in addition to teaching how I want my students to learn. Now I am devoted to teaching and will do anything I can to improve myself and the system. (B10S5)

Master teachers were able to identify and clearly describe some key shifts in their thinking about teaching and learning. Their responses were eloquent and thoughtful, and illustrated a common experience of coming to realize that learning and teaching was very different than they had initially understood it to be. We can only briefly share some of their answers here. For example, “Letting go of control and of a particular idea of myself as a university teacher, realizing it is not necessary to lecture to be successful” (D2MT3). Another wrote extensively about his realization that, “Students understand much less of what we teach than we think, and more realistic assessment is needed to correct this” (D4MT2). Like the beginning teachers who were disturbed by the realization that university faculty are poorly prepared for teaching and university education is “poorly delivered”, a master teacher described the shock of:



realizing I didn't have a good grounding for a big part of my professional work, teaching....I tried to get away from the 'stand and deliver' mode of instruction...in one case the results were disastrous. Despite the importance and time I attached to teaching, I had too little grounding for analyzing benefits and pitfalls – experience and observed practice were my only foundations. (D7MT4)

When asked whether there were key concepts that allowed them to teach effectively, master teachers provided a wide range of responses, some of which effectively illustrated the initially problematic nature of these ideas, for example:

What we call critical thinking often brings out our worst thinking. Students and professors have strong internal editors, consistently warning them not to take risks, encouraging them to “fake it”. Balancing what Peter Elbow calls “doubting” with more of what he calls “believing” will evoke our creative imaginations, encourage community rather than isolation. (E16MT5)

Other examples illustrated the need to appreciate what we know and don't know and to think about new ways of doing things with comments like “ pay attention to the teaching ideas and experiences of others, even in areas that don't seem relevant to mine, and use or adapt whatever pieces seem relevant to my situation” (E11MT4), or “having a defensible and explicit assessment scheme and sharing it with students promotes student learning” (E6MT3), and “university learning is about learning new ways of looking at things: teachers need to invite students into new ways of viewing the problem(s) posed and allow them to see how this new way of thinking is fruitful” (E17MT2).

Asked if they had ever shared with beginning teachers concepts that seemed to reshape the novices' understanding of teaching, the master teachers and educational developers replied in the affirmative and identified such ideas as: “deep and surface learning” (C8ED2), “the ICE framework for assessment” (C3MT3 and C4ED1), “build the foundation well” (C1MT1), and “people learn in different ways” (C10ED1).

Looking across the responses to all questions by every respondent group, we were able to identify the following themes in the ideas expressed by participants in our study:

- Recognizing the impact of teaching, especially assessment, on learning
- Appreciating the variation in students' learning needs, capacities, styles
- Gaining access to literature/research on teaching and learning
- Learning to let go of my own needs for control, success, authority
- Realizing that many/most postsecondary teaching practices are not educationally defensible
- Appreciating that teaching is all about supporting/promoting student learning
- Finding effective ways to actively engage students in learning
- Gaining a better understanding of what kind of learning is required by students
- Recognizing there is no one best way to teach in all circumstances: “it depends...”
- Realizing that teaching need not be a private affair, and is easier in a supportive community environment

In other words, when we searched for significant shifts in teachers' thinking, asking 27 teachers probing questions intended to help us identify ideas that were initially problematic and then opened up new ways for teachers to understand and approach postsecondary teaching, we collected 87 distinct responses which we then grouped according to commonalities within those responses. These themes in effect highlight particular steps in the process of learning to think like a teacher. At this stage in our research we are not able to say whether any one of these themes is of greater importance than any other. Similarly to the experience of Davies and Mangan (2005) who explored threshold concepts in economics, we found it helpful to think of a *web* of ideas or themes (rather than an ordered hierarchy), given the integrated nature of practical analysis and judgment in postsecondary teaching.

Confident in our elucidation of themes, we nonetheless wondered whether or not these themes were threshold concepts. Our colleagues in other disciplines debate whether such recognizable concepts as momentum (in physics) or opportunity cost (in economics) are threshold concepts. Whereas we wondered whether our list of themes could even be classified as "concepts". We used Donald's (2002) definition of a concept as "a unit or element of knowledge that allows us to organize experience" as our guide but this did not help us with the issue of what constitutes knowledge in a field where experience is diverse and value laden and the knowledge base has not yet been codified or made explicit. We did take some comfort in the experience of others:

Threshold concepts would seem to be more readily identified within disciplinary contexts where there is a relatively greater degree of consensus on what constitutes a body of knowledge. (Meyer & Land, 2003, p 9)

As we looked for appropriate language to use, and tried to connect themes identified by participants with terminology available in the literature on teaching and learning, we became aware of the need to discuss our results with our colleagues in the field. This process of identifying threshold concepts called upon us to engage in a critical analysis and creative restructuring of our own knowledge base for postsecondary teaching, and we hoped others might respond to our invitation to engage in the process with us – thus, this paper.

In the end, we identified the following recognized concepts in the field of postsecondary teaching as potential threshold concepts in this field, based on our interpretation of participants' responses:

- Assessment *for/as* learning, not *of* learning (Knight, 1995)
- Learning-centred teaching (Barr & Tagg, 1995; Hunt & Chalmers, 2012)
- Accommodation for diversity (Grace & Gravestock, 2009)
- Context-driven practice (i.e., no one best way) (Cranton, 1998)

We believe that some of the other themes identified are indicative of additional threshold concepts, but we are not sure how to phrase them in a way that would be meaningful outside the context of this study. In addition, three concepts arose that clearly had a significant impact on teachers' understanding: first, reflective practice, second, professional accountability, and third, community of practice. These concepts do not meet Meyer and Land's (2003) criteria of being "bounded", in that none of them is unique to the field of postsecondary teaching, rather they are characteristic of many fields of professional practice. However, teachers did experience these

ideas of teaching as a transformative threshold to a new way of thinking about their teaching practice.

Each theme and concept (threshold and otherwise) named above was identified as significant in some way by more than one of the three respondent groups in our study: master teachers, educational developers and beginning teachers.

### Discussion

In putting forward the list of concepts identified in this study, we do not mean to imply that it is a definitive compilation of threshold concepts in postsecondary teaching. Our work so far does suggest that threshold concepts are relevant to the field of postsecondary teaching. The novice and expert teachers who participated were able to engage in the study in a meaningful way – our questions made sense to them, they were able to respond, and there were enough similarities in their responses to allow us to highlight themes and extract some possible threshold concepts.

At this stage, we believe the greatest value of threshold concepts for postsecondary teaching lies in the discussion that arises in the process of identifying and naming the concepts. Threshold concepts do not exist a priori; they have no meaning outside the community of practice in a particular discipline or field. Threshold concepts arise as a field develops and are defined as practitioners and scholars in the field define their field. The broader the participation in this process, and the more engaged the discussion, the more meaningful will be the outcomes in terms of defining threshold concepts. Threshold concepts are useful not only to new practitioners in a field of practice and those who induct them into the field, but also contribute to development of the field itself. Meyer and Land (2005) state that threshold concepts integrate and define the scope of the academic community with which a student is engaging. Within each discipline, field or profession, articulating threshold concepts is a means of defining expertise in the field of practice, delimiting scope of practice, and ascertaining terms of entry into practice. Meyer and Land (2006) suggest that threshold concepts are “particularly helpful in those disciplines where fundamental disputes remain despite the existence of a well-established mainstream” (p. 16). What are the issues in the field of postsecondary teaching? To date, postsecondary teaching has been especially concerned with the problem of how to encourage *any* teaching development, and has placed considerably less emphasis on how *best* to develop teaching. In other words, the focus has largely been on getting faculty to engage in teaching development activities. By changing the focus to identifying and sharing ideas that matter work with threshold concepts may legitimize postsecondary teaching, which in turn may engage more faculty members.

Even though threshold concepts are significant to a discipline in particular ways, they are a privileged and contestable way of understanding something. There is the question of “*whose* threshold concepts [will count]” (Meyer & Land, 2006, p. 16). Could it be that in our efforts to raise the profile of teaching in postsecondary institutions, we have backed away from such contentious and potentially divisive projects as articulating threshold concepts? This question of whose concepts matter is particularly interesting in the field of postsecondary teaching, where individual teachers are largely responsible for developing their own best approach to teaching. We contend that, just as all disciplines must prepare students to enter a world of intellectual uncertainty, so also a teacher development program should problematize the notion of being a teacher. Threshold concepts represent a useful way to engage teachers in critically reflective

dialogue: what does it mean to think and act as a *teacher* in postsecondary settings? It is worth knowing: What are the characteristics and boundaries of legitimate practice, and what concepts allow practitioners to communicate with one another and further develop disciplinary knowledge and practice.

There is much work to be done regarding such issues at this point in the development of postsecondary teaching, and threshold concepts seem to be a useful tool for the work. Davies and Mangan (2005) assert that the emphasis on transformation of *discipline* knowledge is the key distinctive contribution of threshold concepts; “this also leads to a distinctive way of identifying these discipline thresholds: focusing on key shifts in thinking in the history of the discipline” (p16). We did not take that approach in our study, and do recommend that it be considered as an approach to identifying threshold concepts in postsecondary teaching, where there is now a history that can be analyzed.

We also recognize and appreciate the approach taken by those disciplinary experts who have argued that particular concepts in their disciplines are threshold concepts (see, for example, the argument Cousin [2006] puts forward for “otherness” as a threshold concept in cultural studies). We look forward to similarly well-constructed and persuasive arguments being made by our postsecondary teaching colleagues, either for some of the concepts we have identified through this preliminary study, or for others. Educational developers who work with teachers at various stages of development are particularly well-placed to name possible threshold concepts and then study, in collaboration with teachers, the process by which teachers negotiate their way through a particular conceptual threshold.

### Conclusion

The consensus within our limited sample is compelling and we present our short list of threshold concepts as a provisional judgment worthy of further consideration within the field of postsecondary teaching. The true value of this work will be in carrying out additional studies in a variety of contexts and engaging multiple constituent groups, and in discussing and debating the results with others in the field. Such critical inquiry will further the development of postsecondary teaching as a field of study and community of practice. We owe these conversations to ourselves, disciplinary experts and novices alike.

### References

- Barr, R., & Tagg, J. (1995). From teaching to learning: A new paradigm for undergraduate education. *Change*, 27(6), 13-25. <http://dx.doi.org/10.1080/00091383.1995.10544672>
- Bradbeer, J. (2005). Threshold concepts and troublesome knowledge in the GEES disciplines. *Planet*, 15, 3. <http://dx.doi.org/10.11120/plan.2005.00150003>
- Britnell, J., Brockerhoff-Macdonald, B., Carter, L., Dawson, D., Doucet, L., Evers, F., Hall, S., Kerr, D., Liboiron-Grenier, L., McIntyre, G., Mighty, J. Siddall, G., & Wilson, J. (2010). *University faculty engagement in teaching development activities, Phase II*. Toronto: Higher Education Council of Ontario.
- Cousin, G. (2006). Threshold concepts, troublesome knowledge and emotional capital: an exploration into learning about others. In J. H. F. Meyer & R. Land (Eds.), *Overcoming barriers to student understanding: Threshold concepts and troublesome knowledge* (pp. 134 - 148). London: Routledge.

- Cranton, P. (1994). Self-directed and transformative instructional development. *Journal of Higher Education*, 65(6), 726-744. <http://dx.doi.org/10.2307/2943826>
- Cranton, P. (1998). *No one way: Teaching and Learning in higher education*. Toronto, ON: Wall & Emerson.
- Davies, P. (2003, August). Threshold concepts: How can we recognize them? Paper presented at the European Association in Learning and Instruction Conference (EARLI), Padova, Italy.
- Davies, P., & Mangan, J. (2005, August). Recognizing threshold concepts: an exploration of different approaches. Paper presented at the European Association in Learning and Instruction Conference (EARLI), Nicosia, Cyprus.
- Donald, J. (2002). *Learning to think: disciplinary perspectives*. San Francisco: Jossey Bass.
- Entwhistle, N. (2010) Taking stock: An overview of key research findings. In J. Christensen Hughes & J. Mighty (Eds.), *Taking stock: Research on teaching and learning in higher education*. Policy Studies Series, Montreal and Kingston, Canada: McGill-Queen's University Press.
- Evers, F., & Hall, S., Britnell, J., Brockerhoff-Macdonald, B., Carter, L., Dawson, D., Kerr, D., Mighty, J., Siddall, G. & Wolf, P. (2009). *Faculty engagement in teaching development activities, phase 1: Literature review*. Toronto, ON: Higher Education Council of Ontario.
- Grace, S., & Gravestock, P. (2009). *Inclusion and diversity: Meeting the needs of all students*. New York & London: Routledge.
- Hunt, L., & Chalmers, D. (Eds.), (2012). *University teaching in focus: A learning-centred approach*. Camberwell, AU: Acer Press.
- Ives, C., McAlpine, L., & Gandell, T (2009). A systematic approach to evaluating teaching and learning initiatives in post-secondary education. *Canadian Journal of Higher Education* 39(2), 45-76.
- Knapper, C. (2010). Changing teaching practice: Barriers and strategies. In J. Christensen Hughes & J. Mighty (Eds.), *Taking stock: Research on teaching and learning in higher education*. Policy Studies Series, Montreal and Kingston, Canada: McGill-Queen's University Press.
- Knight, P. (1995). *Assessment for learning*. London: Kogan Page.
- Land, R. (2008). Overcoming barriers to student understanding: Threshold concepts and troublesome knowledge. Threshold Concepts Conference: from theory to practice, Queen's University, Kingston, Ontario, Canada, 18th - 20th June 2008
- Lucas, U., & Mladenovic, R. (2006). Developing new 'world views': Threshold concepts in introductory accounting. In J. H. F. Meyer & R. Land (Eds.), *Overcoming barriers to student understanding: Threshold concepts and troublesome knowledge* (pp. 148 - 159). London: Routledge.
- Meyer, J. H. F., & Land, R. (2003). Threshold concepts and troublesome knowledge: linkages to ways of thinking and practicing within the disciplines. In C. Rust (Ed.), *Improving student learning: Improving student learning theory and practice – ten years on* (pp. 412 - 424). Oxford: Oxford Centre for Staff and Learning Development.
- Meyer, J. H. F., & Land, R. (2005). Threshold concepts and troublesome knowledge (2): epistemological considerations and a conceptual framework for teaching and learning. *Higher Education* 49, 373-388. <http://dx.doi.org/10.1007/s10734-004-6779-5>

- Meyer, J. H. F., & Land, R. (2006). Threshold concepts and troublesome knowledge: an introduction. In J. H. F. Meyer & R. Land (Eds.), *Overcoming barriers to student understanding: Threshold concepts and troublesome knowledge* (pp. 30- 18). London: Routledge.
- Meyer, J. H. F., Land, R., & Baillie, C. (Eds.). (2010). *Threshold concepts and transformative learning*. Rotterdam, The Netherlands: Sense Publishers.
- Nilson, L. B. (2010). *Teaching at its best: A research based resource for college instructors* (3<sup>rd</sup> ed.). San Francisco: Jossey-Bass.
- Parker, P. J., Zajonc, A., & Scribner, M. (2010). *The heart of higher education: A call to renewal*. San Francisco: Jossey-Bass.
- Perkins, D. (2006). Constructivism and troublesome knowledge. In J. H. F Meyer & R. Land (Eds.), *Overcoming barriers to student understanding: Threshold concepts and troublesome knowledge* (pp. 33 - 47). London: Routledge.
- Schönwetter, D. J., Ellis, D., Taylor, L., & Koop, V., (2008). An exploration of graduate courses on college and university teaching in Canada and the USA. *Journal of Graduate and Professional Student Development, 11*(1), 7-29.
- Taylor, C. (2006). Threshold concepts in biology: Do they fit the definition? In J. H. F. Meyer & R. Land, (Eds.), *Overcoming barriers to student understanding: Threshold concepts and troublesome knowledge* (pp. 87 - 99). London: Routledge.
- Weimer, M. (2013). *Learner-centered teaching: Five key changes to practice* (2<sup>nd</sup> ed.). San Francisco: Jossey-Bass.
- Weston, C., & McAlpine, L. (2001). Integrating the scholarship of teaching into disciplines. In C. Kreber (Ed.), *Scholarship revisited: Perspectives on the scholarship of teaching* (pp. 89-98). *New directions in teaching and learning, no. 86*. San Francisco: Jossey-Bass.