

Challenging Accepted Wisdom about the Place of Conceptions of Teaching in University Teaching Improvement

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In recent years, conceptions of teaching held by academic staff have achieved an increased focus in the scholarly and practical work of teaching developers. Views on the impact of conceptions of teaching on improving university teaching, as well as their significance in doing so, vary from those that advocate changing conceptions as a necessary first step in the process of improvement to more recent views that characterize conceptions of teaching as merely artifacts of reflection on teaching. This paper explores this range of views, raises a number of questions about the current accepted views on the importance of conceptions of teaching development work, and challenges the current accepted wisdom in this important area.

Teaching development can play a critical role in ensuring the quality of teaching and learning in universities. However, a proportion of teaching development currently carried out and discussed in the literature is underpinned by a set of assumptions that may not be accurate. These assumptions are related to the part that university teachers' beliefs about or conceptions of teaching (COTs) may play in improving teaching.

This paper explores the assumed place of COTs in an attempt to help university teachers improve their teaching. Three assumptions underpinning the use of COTs in teaching development work are examined in detail and questions about each are raised. Through this examination, the central question about the place of COTs in teaching development is explored and deliberately questioned and challenged. The paper takes on the position of "devil's advocate" and, in seeking to challenge accepted wisdom in this area, presents arguments that are contrary to current widely accepted views about the place of COTs in teaching development and improvement.

The paper does not seek to argue that COTs are unimportant but to argue that it is timely to examine and challenge their often assumed primary position in efforts to improve teaching. In order that there is clarity about how COTs should be used to improve teaching and student learning, their precise impact and role in such improvement should be understood clearly. By taking a questioning and critical stance, this paper is a deliberate re-examination of our collective wisdom in the area of COTs.

Defining Conceptions of Teaching in Higher Education

In the context of the conceptions of teaching (COTs) held by school teachers, Pajares (1992) argues that the lack of a clear, agreed upon definition and terminology has impeded research in this area. The impediment stretches to educational research and practice in the higher education arena. Terms used here include conceptions, beliefs,

orientations, approaches and intentions but these terms are sometimes used interchangeably and, as Kember (1997) notes, definitions are often absent from the literature.

Pratt (1992) defines conceptions thus:

Conceptions are 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. In effect, we view the world through the lenses of our conceptions, interpreting and acting in accordance with our understanding of the world. (p. 204)

For the sake of clarity, in this paper conceptions of university teaching are defined as specific meanings attached to university teaching and learning phenomena, which are claimed to then mediate a teacher's view of, and responses to, their teaching context. If this claim of causal mediation is accurate, then there are potential implications for the practice of academic staff development. This paper explores this and other related claims.

Categories of COTs in Higher Education

On the basis his review of literature on COTs of university academics, Kember (1997) concluded that there was a high level of agreement between researchers about conception of teaching category schemes. He suggests that a synthesis of the research in the articles reviewed essentially puts conceptions into two categories:

1. teacher-centered/content-oriented
2. student-centered/learning-oriented

He further suggests that each of these two categories has two sub-categories or associated conceptions.

The teacher-centered/content-oriented category can be further divided into

- 1.1 imparting information
- 1.2 transmitting structured knowledge.

The student-centered/learning-oriented category can be further categorized as

- 2.1 facilitating understanding
- 2.2 conceptual change/intellectual development.

A fifth category/conception that links or bridges the two major orientations can be labeled “student-teacher interaction” (Kember, 1997; Kember and Kwan, 2000).

Broadly speaking, a teacher/content-centered conception of teaching is one where the teacher’s job is conceived of as knowing her subject and then accurately and clearly imparting that knowledge to her students. From this conception, says Watkins (1998), it is the students’ fault if the learning outcomes are unsatisfactory and specifically, students’ lack of motivation or ability is to blame.

Watkins (1998) argues that a student/learning-centered COT is one where high quality learning is viewed as “requiring active construction of meaning and the possibility of conceptual change on the part of the learners” (p. 20). From this student/learner-centered conception, it is the teacher’s role to facilitate and encourage such construction and development (Watkins, 1998).

Why Consider COTs in Teaching Development?

There are at least three implied or argued assumptions that have led to the current pre-eminence of COTs in teaching development and improvement work in universities. Each of these three assumptions is discussed below.

1. *The assumed clear, causal relationships between teaching conceptions, teaching practice and student learning.* Pajares (1992) notes there is an assumption that the conceptions teachers hold influence their judgements, which in turn, affect their classroom teaching behavior. Kane, Sandretto, and Heath (2002) suggest that research into university teachers’ COTs is grounded in the understanding that these conceptions drive teachers’ practices.

Many researchers argue further that the teaching practices that lecturers adopt based on their conceptions, in turn, affect the way in which students go about their study. For example, Gow and Kember (1993) claim to have found empirical evidence that adopting a predominantly transmission conception in teaching (as defined by Kember (1997) above) discourages students from adopting deep approaches to learning. A “deep approach” can be crudely summarized as attempting to make sense of content

while the less desirable “surface approach” can be similarly summarized as attempting to remember content (Gibbs and Coffey, 2004).

However, as Kane et al. (2002) note, Gow and Kember (1993) did not actually examine teaching practice and like many similar studies, assumed teaching practice from *espoused theories of action*, that is, from teacher responses to questions about their behavior in a teaching situation. As Kane et al. (2002) argue, an analysis of a teacher’s professed views should be supplemented by an examination of their actual teaching or *theories in use*, and of the relationship between what teachers say they do and what they actually do in teaching settings. Without such examination, the validity of teachers’ descriptions of their practice; of the assumed link between their conceptions and practice and of the assumed link between their practices and their students approaches to learning, are untested.

In another example, Ho, Watkins and Kelly (2001) argue that empirical research by Trigwell and Prosser (1996a, 1996b) has demonstrated that teachers’ COTs affect their teaching practices and their students’ learning. Specifically, Ho et al. (2001) claim that a lecturer who conceives of teaching as the transmission of information is likely to employ teacher centered strategies in order to operationalize that conception. She is likely to believe that she, as the teacher, holds all the knowledge and information and that it will need to be conveyed from them, as experts, to her students. On the other hand, claim Ho et al. (2001), a lecturer who conceives of teaching as helping students to develop their own understanding of material is likely to employ student centered strategies so that she can assist her students to come to this understanding.

However, the validity of the empirical research by Trigwell and Prosser (1996b) on which Ho et al. (2001) base their assertions has been questioned by a number of other researchers. Trigwell & Prosser (1996b) reported six conceptions describing teaching. However, as Kane et al. (2002) note, the methodology and the categorization of conceptions is inadequately described by Trigwell and Prosser (1996b) in their paper. Kember and Kwan (2000) have also raised concerns about Trigwell and Prosser’s (1996b) study, advising that caution should be exercised as the authors do not define their constructs and use labels to identify COTs that are very close to the *intention* component of the *approaches to teaching* that they also describe. Kember and Kwan (2000) go as far as suggesting that Trigwell and Prosser’s (1996b) claim to have established a relationship between teaching conceptions and teaching approach should be treated with skepticism.

On the basis of an academic staff development program using a conceptual change approach, Ho et al., (2001) found that six teachers who showed positive changes in their COTs also demonstrated

“significant improvement in their teaching practices as perceived by their students” (p. 163), and three of these teachers were able to “induc[e] a positive change in their students’ studying habits” (p. 163). On the basis of these findings, Ho et al. concluded that their study “provid[es] evidence that a development in teaching conceptions can *lead to* improvements in teaching practices and in student learning” (p. 165, emphasis added).

Ho et al. (2001) go further, claiming there has been a “recognition that genuine improvement in teachers has to *begin with* a change in their thinking about teaching and learning” (p. 145, emphasis added). They state that the modification of “teacher’s prior COTs...to one of facilitating student learning is required *before* student-centered strategies could be eventually adopted” (p. 145, emphasis added). However, these claims appear to be at odds with the empirical evidence available, including the studies and literature mentioned earlier (Gow and Kember, 1993; Trigwell and Prosser, 1996a, 1996b) which, in addition to having the methodological limitations outlined above that cloud the results, show no indication of a unidirectional relationship between conceptions and strategies with the former coming first.

In addition, the small sample size in Ho et al.’s (2001) study gives cause to exercise caution in drawing definitive conclusions. Further, Eley (2006) suggests that the conclusion of a directional influence from conceptions to practices is perhaps too strong a conclusion to draw given the methodology taken by Ho et al. (2001) in their study. As he points out, Ho et al. (2001) determine their study participants’ COTs by asking them general, open questions that lead participants to reflect broadly on past experiences. As Eley (2006) says, the responses derived from such reflections cannot enable conclusions about whether or not any COTs evident in the responses will be evident in later teaching.

Ho et al. (2001), like many other researchers in the area, did not actually examine teaching practice. Espoused theories of action are not necessarily the same as theories in action and since the latter are unknown in the Ho et al. (2001) study, it seems far-fetched to claim that they are driven by conceptions and then, in turn, drive student learning in particular ways.

As Kane et al. (2002) conclude on the basis of their review of the relevant literature, there is insufficient empirical support for the claim that there is a relationship between teaching academics’ espoused beliefs about teaching and their specific teaching practices. It is therefore not possible to confidently claim, as many researchers currently do, a directional influence from teaching conceptions to teaching practice to student learning.

2. *The assumption that teaching improvement depends on the existence of a student-centered conception of teaching.* Despite the doubts about the

validity of the methodology and conclusions outlined earlier, empirical evidence such as that provided by Gow and Kember (1993) and Trigwell and Prosser (1996b) has led to the assumption that improvements in university teaching must be underpinned by a particular conception of teaching that is likely to lead to high quality student learning outcomes. Literature in the area indicates an assumption that university teachers’ thinking must move away from a teacher/content-centered conception and toward a student/learning-centered conception in order that they would be able to improve teaching practices and student learning outcomes (see for example, Weston and McAlpine, 1999; Saroyan and Amunsden, 2001). Literature on school teaching development also indicates a common assumption that some form of change in teaching beliefs, attitudes and/or perceptions must first be initiated. It has been further assumed that this change will lead to changes in teaching practices which will in turn lead to improved student learning (Guskey, 1986). However, these assumptions are untested in higher education.

Kember (1997) suggests, “There is...an implication, which is often made explicit, that the conceptions [of teaching] towards the student-centered end of the continuum are superior” (p. 261). In terms of assisting teachers to improve their teaching, as Gibbs and Coffey (2004) intimate, if the ultimate aim of academic teaching development is to improve student learning, rather than to improve teaching *per se*, teaching development activities and approaches need to be oriented toward directing or encouraging teachers to be focused on student learning rather than on teaching performance.

Without doubt, it is preferable for university teachers to be focused on high quality student learning outcomes than not. But does such a *focus* necessarily mean they must hold a student-centered *conception* of teaching, and do so from the very beginning? In terms of teaching and learning outcomes, is it possible that being aware of and/or focused on students and their learning could be equivalent to holding such a conception? As outlined earlier, a conception is a set of specific meanings attached to university teaching and learning phenomena, which are claimed to then mediate a teacher’s view of, and responses to, their teaching context. Is it necessary for a teacher to hold a student/learning centered conception of teaching in order to be an excellent teacher? Is it possible that focusing on students and their learning while undertaking excellent teaching practice could be as effective in this regard?

It may be that a concern for personal teaching practices and focusing on student learning might be better seen as independent dimensions rather than as endpoints of a single dimension. Gibbs and Coffey (2004) provide empirical evidence that would point to supporting this idea. In relation to their research using the Approaches to Teaching Inventory to

measure COTs, Gibbs and Coffey (2004) suggest that “Teacher Focus and Student Focus are independent scales...not opposite ends of a single scale...and it is possible for a teacher to score highly on both scales at the same time” (p. 91). If they are seen as independent dimensions, this would suggest that teaching development work should aim to foster both, rather than assuming that one must necessarily precede the other.

3. *The assumed limitations of a skill-based approach to teaching development.* A third assumption behind considering teaching conceptions in teaching development work is the one that focusing on teaching skills has limited potential in terms of improving teaching and learning.

Ho et al. (2001) claim that a number of educationalists view as erroneous the assumption underlying many staff development programs that “providing tertiary teachers with prescribed skills and teaching recipes will change their teaching practices and thus improve their students’ learning outcomes” (p. 144). Summarizing the observations and research of Gibbs (1995) and Trigwell (1995), Ho et al. (2001) claim that the experience of many staff developers suggest otherwise: often, according to these authors, teaching development participants will “query the feasibility of the methods presented [and/or] defend the methods they are currently using” (p. 144). Ho et al.’s (2001) argument is that, given the lack of unquestioning acceptance of new skills and techniques by program participants, teaching development work must therefore go beyond skills and address COTs and *thereby* “bring about fundamental changes toward teaching excellence in tertiary teachers” (p.144).

It is not the facilitation of the development of teaching methods, skills and strategies that is in dispute – all teachers must have a repertoire of these in order to function as effective teachers. However, in order to develop an appropriate teaching repertoire, must teachers necessarily have an “acceptable” conception of teaching? Must such a conception come first? Is debating this essentially a case of debating “the chicken or the egg?”

If we assume for a moment that we can liken teaching conceptions to attitudes and teaching practice to behavior, the chicken/egg question may be usefully examined in light of a glance at the extensive psychological literature on attitudes and behaviors. In the lay world, it is widely assumed that attitudes drive behavior – for example, advertising companies spend extensive budgets based on the assumption that if they change people’s attitudes toward products, that will change their consumptive behavior. However, the enormous and growing body of psychological research indicates that human behavior is not that simple and that the relationship between attitudes and behavior is a complex one.

Research in the field of psychology suggests that if either behavior or attitudes change, the other will

follow (Myer, 1996). It is possible that if we change teaching behaviors (practices) to become increasingly student and learning oriented, the teaching attitudes (conceptions) may follow. There is as yet no proof that this will occur, but neither is there yet clear evidence that changing conceptions will necessarily lead to improved practice and/or and improved student learning.

Based on his study of teacher planning of specific teaching episodes, Eley (2006) argues that rather than evoking COTs, teacher thinking seemed to be more about contextually localized models of what students are likely to do. His study intended to look for evidence of a functional role for COTs in specific and individual teaching activities. He hypothesised that if there is a functional influence that comes from a conception of teaching, it might reasonably be expected to manifest in teacher planning and decision making about how to teach a specific concept in class. His findings did not support the notion that COTs are consciously evoked in planning for specific teaching episodes and he concludes that such conceptions do not necessarily play a functional role in such planning.

Eley (2006) concludes that “focusing on developing a conception of teaching, albeit a desirable one, and hoping for some sort of broad ripple effect provides no guarantee that such conceptions would in any sense be evoked, and thus have influence, during detailed teaching activities” (p. 21).

Further, extensive work with Graduate Teaching Assistants in the U.S. college system has led to the proposal that new higher education teachers tend to pass through a series of stages in their development as university teachers. Nyquist and Wulff (1996) argue that there are three broad stages of development for a university teacher. Beginning teachers, they argue, are concerned with issues related to themselves – what they should wear, whether the students will like them, how well they will fit into the role of teacher. This has been termed the “*self/survival*” stage. In the next stage, novice teachers begin to wonder about teaching methods – how to lecture effectively, assess learning and so on – the “*skills*” stage. The last stage is where they turn their attention from themselves and to their students and begin to wonder whether their students are learning – the “*outcomes*” stage. At least for new teachers, who are often those looking for teaching development, it seems that the development of COTs is generally less likely to occur in the earlier stages of their teaching career when they are focused on survival and skill development and more likely to happen in the later third stage when their focus shifts to students and their learning. Yet, arguably, despite the probable absence of a “desirable” conception beforehand, the teaching of many of these new teachers is likely to improve through the first to second stages.

It appears, then, that neglecting the skill-based approach to teaching development may be akin to disposing of the metaphorical baby *and* bathwater. Research and investigation that helps build and refine theory are crucial and empirical evidence derived from experiment or systematic observation and evaluation is a central part of testing such theory. There is, as yet, however, no clear empirical evidence that shows that changes to COTs must precede changes to teaching practice. Despite this, some researchers are claiming that changes to conceptions are a necessary first step to “genuine” (Ho et al., 2001) and “subsequent” (Saroyan & Amundsen, 2001) teaching improvement. Is this to say that aiming to improving teaching skills is not a valuable objective for teaching developers? There is a view that those new to university teaching (as well as those, arguably, new to focusing attention on their teaching even if they have been teaching for some time) pass through stages of development that necessitate a focus on themselves and their teaching and the acquisition of skills before they can begin to conceptualize what they are doing and why. However, developing teachers’ COTs is currently viewed by some, including Ho et al., (2001), Saroyan and Amundsen, (2001) and Weston and McAlpine (1999) among others, as a higher priority to providing teachers with classroom and related skills to carry out their teaching practice. Yet how can conceptions be enacted without teaching skills and practices? And how can changed teaching conceptions be evident in the absence of high quality teaching skills and practices?

The Current Dominance of the Constructivism Paradigm Underpinning Teaching Development

One argument for considering teachers’ conceptions in teaching development work is that the constructivist paradigm suggests that such consideration is essential and this paradigm is currently prominent in teaching development thinking. Constructivist epistemology is a philosophical position where learning is viewed as an active process in which learners construct new concepts or ideas for themselves (Blais, 1988). Teachers (of teaching development programs) try to encourage “students” in these programs to discover principles and ideas for themselves through active dialogue, negotiation and other similar methods. From this theoretical base, in order to change and improve teaching, teachers of development programs would need to engage their “students” in constructing and adapting new practices that are relevant to their context. Specifically, from a constructivist position, teachers, as students of teaching development programs, should be treated as active participants in the learning process who construct their own unique understandings of what is taught, based on what they already *know and believe*.

At its best, constructivism highlights the interaction between knowledge and beliefs. The argument that teachers’ beliefs about or conceptions of teaching are paramount in development work is currently justified by the constructivist position. However, what seems not to be equally emphasised currently in teaching development work is teachers’ knowledge – their repertoire of teaching skills, strategies and practices. A focus on beliefs without a corresponding focus on knowledge may represent a misunderstanding or simplification of the constructivist position. As Devlin (2002) has argued, from a constructivist view of teaching development, students of teaching should be encouraged to discover principles and ideas for themselves through teaching *practices* that are relevant to their teaching and learning context. That is, the development of teaching practices and reflecting on and thinking about those practices should occur together rather than in strict sequence with either wholly preceding the other. Beliefs about teaching cannot be used in development work without some method of operationalizing them into teaching practice.

While the constructivist paradigm currently underpinning teaching development work may offer some appropriate guidance and direction for this work, it cannot justify promoting teaching beliefs over knowledge or teaching conceptions over practice. Both are important, as the constructivist theory itself argues.

How Central Should COTs be in Teaching Development Work?

On the basis of his detailed study, Eley (2006) concludes that if there is no necessary functional role for COTs in detailed teaching planning, the implication for teacher development is a focus on developing particular practices within specific teaching contexts. As Eley (2006) puts it, “If we want a teacher to behave in specific, more ‘student oriented’ ways in a particular context, then we need to arrange for that teacher to practice those specific ways in that particular context” (p. 21).

There may be some limited empirical evidence that supports the validity of this suggestion. For example, Hativa (2000) and Devlin (2003) both developed and implemented customised interventions for individual staff exhibiting poor teaching effectiveness. The focus in Hativa’s (2000) study was specifically on problem teaching behaviors identified through a range of feedback and data collecting mechanisms. These behaviors were then targeted with specific modifications practiced by the teachers under close supervision from an educational developer. However, it should be noted that the sample size was small (two), which therefore limits the generalizability of the findings to those other than the teachers in the study, and that the educational developer also discussed with each participant their

beliefs and their potential negative impact on teaching and learning. The focus in Devlin's (2003) study was the way in which a single teacher's teaching behavior affected student learning underpinned by a broad intention to shift the lecturer's conception to a more student-centered one. This shift was undertaken through encouraging changes in teacher behavior and through a discussion with the teacher about shifting his focus from his teaching to his students' learning. In Devlin's (2003) study, the new behaviors were chosen, trialed, amended and continually monitored with the support of an educational developer so as to maximise the quality of the students' learning.

In both studies, the results showed improvement in the teaching behaviors targeted, as was expected given the strong emphasis on this aspect of teaching. Interestingly, the results of both studies also indicated subtle shifts in attitudes and beliefs about teaching toward more student-centered views. Two relevant questions here may be:

1. Did the teachers in Devlin's (2003) and Hativa's (2000) studies change their conceptions *per se*, or did they simply increase their focus on/orientation to students in their teaching practice?
2. If they did change their conceptions, did this necessarily occur before they changed their practices?

Neither study can provide answers to these questions.

Eley (2006) argues that the directionality of the relationship between teaching conceptions and teaching practices might be the reverse of what is currently widely accepted. That is, COTs may be the outcomes of teachers' reflective thinking about their teaching practice. McAlpine and Weston's (2000) work with exemplary university teachers similarly conceives of reflection on teaching as a "mechanism for improving teaching" (p. 382). Eley (2006) argues more specifically that "teaching expertise should be seen as based on the existence of a rich repertoire of highly context-specific teaching practices, which enable proficient, rapid and adaptive responses to a wide variety of teaching situations" (p. 22) and further that if teaching developers concentrate on developing such repertoires, conceptions may follow, serving as indicators of the existence of the repertoires. Eley is not the first to suggest such a model of teacher change. As early as 1986, Guskey posed a model in which changes in classroom practice precede changes in student learning outcomes and the evidence of the latter change brings about changes in teaching beliefs and attitudes.

However, Eley's (2006) suggestion that teaching developers should focus on developing repertoires of context-based practices as a *preferred* method of teaching development is speculative and further

empirical evidence to test it is needed before firm conclusions can be drawn. It may be that the development of context-based teaching practices that focus on their ultimate impact on student learning, and the development of COTs that focus on students and learning are two sides of the same teaching development coin and cannot sensibly be completely separated or prioritized.

Conclusion

Arguably, many teaching developers would agree that conceptions of or beliefs about teaching that focus on student learning outcomes are more desirable than conceptions or beliefs that focus on the teaching and/or content *per se*. Teaching development work that led to changing conceptions to more student/learning oriented conceptions would, therefore, probably be almost universally acceptable.

Two issues related to this overall objective in teaching development remain in dispute. These are the order of change and the best means for achieving change. In terms of the order of change, we really do not know from the available research evidence whether changes in conceptions must come before changes in practices; vice versa or whether changes in both conceptions and practice might occur together over a period of development and beyond in no fixed order. Because of the lack of clarity on this first issue, the second issue of the most effective and efficient methods for bringing about a greater focus on students/learning in teachers therefore cannot yet be determined with confidence.

The confusion in these related areas is highlighted by the current range of views on how to achieve teaching development. For example, Ho (2000) and Ho et al. (2001) advocate encouraging teachers to examine, confront and challenge their conceptions and argue this is a necessary first step to better teaching practice. Martin and Ramsden (1993) advocate gently building on the conceptions that teachers bring with them to development processes, suggesting that "the knowledge, skills, and the concepts must be integrated and reintegrated by each teacher during a slow process of gaining understanding" (p. 155). Devlin (2003) and Hativa (2000) provide some evidence that COTs may shift through coaching the application of teacher practices in student or learner focused ways in particular contexts. And Eley (2006) suggests focusing on developing skills/repertoires within specific contexts and noting whether changes to conceptions follow.

Perhaps one of the more promising models may be the non-linear model offered by Clarke and Hollingsworth (2002) where different paths are available to incorporate the "idiosyncratic and individual nature" (p. 947) of teaching development. These researchers advocate a model that builds on Guskey's (1986) model where change in teaching practice precedes change in student learning

outcomes, which leads to change in teaching beliefs. More specifically, Clarke and Hollingsworth (2002) argue that change occurs through mediating processes in the four domains of sources of external information and support, teaching knowledge and beliefs, professional experimentation and outcomes. As they put it, "This model recognizes the complexity of professional growth through the identification of multiple growth pathways between the [four] domains" (p. 950).

In their work on reflections on teaching, McAlpine and Weston (2000) acknowledge the importance of seeking evidence of a link between teacher reflection and student learning. The present paper has acknowledged a similar need for evidence in relation to the links between COTs, teacher practice and student learning in higher education. The need to explore further and more precisely whether, and if so in what ways, COTs affect teacher behaviors and how these behaviors affect student learning has been highlighted. Understanding in this area has been limited by empirical work of questionable validity as well as by underlying assumptions about the place and effects of COTs that may not be accurate and that this paper has challenged. Specifically, as this paper has argued, the pivotal and primary role of COTs in university teaching development that has often been assumed is open to question.

The challenge now for research around university teaching development is to determine more precisely the part that COTs play in the process of teaching improvement and, ultimately, in ensuring the quality of student learning.

References

- Blais, D. M. (1988) Constructivism: A theoretical revolution in teaching. *Journal of Developmental Education*, 11(3), 2-7.
- Devlin, M. (2002). Taking responsibility isn't everything: A case for developing tertiary students' conceptions of learning. *Teaching in Higher Education*, 7(2), 125-138.
- Devlin, M. (2003). A solution-focused model for improving individual university teaching. *International Journal for Academic Development*, 8(1-2), 77-89.
- Clarke, D., & Hollingsworth, H. (2002). Elaborating a model of teacher professional growth. *Teaching and Teacher Education*, 18, 947-967.
- Eley, M. (2006). Teachers' conceptions of teaching, and the making of specific decisions in planning to teach. *Higher Education*, 51, 191-214.
- Gibbs, G. (1995). Changing lecturers' conceptions of teaching and learning through action research. In A. Brew (Ed.), *Directions in staff development* (pp. 21-35). Buckingham: SRHE and Open University Press.
- Gibbs, G., & Coffey, M. (2004). The impact of training university teachers on their teaching skills, their approach to teaching and the approach to learning of their students. *Active Learning in Higher Education*, 5(1), 87-100.
- Gow, L., & Kember, D. (1993). Conceptions of teaching and their relationship to student learning. *British Journal of Educational Psychology*, 63(1), 20-33.
- Guskey, T. R. (1986). Staff development and the process of teacher change. *Educational Researcher*, 15(5), 5-12.
- Hativa, N. (2000). Becoming a better teacher: A case of changing the pedagogical knowledge and beliefs of law professors. *Instructional Science*, 28, 491-523.
- Ho, A. (2000). A conceptual change approach to staff development: A model for programme design. *International Journal for Academic Development*, 5(1), 30-41.
- Ho, A., Watkins, D., & Kelly, M. (2001). The conceptual change approach to improving teaching and learning: An evaluation of a Hong Kong staff development programme. *Higher Education*, 42, 143-169.
- Kane, R., Sandretto, S., & Heath, C. (2002). Telling half the story: A critical review of research on the teaching beliefs and practices of university academics. *Review of Educational Research*, 72(2), 177-228.
- Kember, D. (1997). A reconceptualisation of the research into university academics' conceptions of teaching. *Learning and Instruction*, 7(3), 255-275.
- Kember, D., & Kwan, K. P. (2000). Lecturers' approaches to teaching and their relationship to conceptions of good teaching. *Instructional Science*, 28, 469-490.
- Martin, E., & Ramsden, P. (1993). An expanding awareness: How lecturers change their understanding of teaching. *Research and Development in Higher Education*, 15, 148-155.
- McAlpine, L., & Weston, C. (2000). Reflection: Issues related to improving professors' teaching and students' learning. *Instructional Science*, 28, 363-385.
- Myer, D. G. (1996). *Social psychology* (4th ed.). New York: McGraw-Hill.
- Nyquist, J. D., & Wulff, D. H. (1996). *Working effectively with graduate assistants*. Thousand Oaks, CA: Sage.
- Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research*, 62(3), 307-332.
- Pratt, D. D. (1992). Conceptions of teaching. *Adult Education Quarterly*, 42(4), 203-220.
- Saroyan, A., & Amusden, C. (2001). Evaluating university teaching: Time to take stock.

- Assessment and Evaluation in Higher Education*, 26(4), 341-353.
- Trigwell, K. (1995). Increasing faculty understanding of teaching. In W. A. Wright (Ed.), *Teaching improvement practices: Successful faculty development strategies* (pp. 76-99). Bolton, MA: Anker.
- Trigwell, K., & Prosser, M. (1996a). Congruence between intention and strategy in university science teachers' approaches to teaching. *Higher Education*, 32(77-87).
- Trigwell, K., & Prosser, M. (1996b). Changing approaches to teaching: A relational perspective. *Studies in Higher Education*, 21(3), 275-284.
- Watkins, D. (1998). A cross-cultural look at perceptions of good teaching: Asia and the West. In J. J. F. Forest (Ed.), *University teaching: International perspectives* (pp. 19-34). New York: Garland Publishing Inc.
- Weston, C., & McAlpine, L. (1999). Toward an integrated approach to instructional consultation. In C. Knapper & S. Piccinin (Eds.), *Using consultants to improve teaching: New directions for teaching and learning* (pp. 85-95). San Francisco: Jossey-Bass.
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