

Chapter 8

An Exploration of the Scholarly Foundations of Educational Development

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Introduction

Good academic work is built on a solid foundation of scholarship. Thus, an exploration of that scholarship should provide insights into the essence of the work. We believe this is true for the work of educational development and so we provide in this chapter one such exploration.

We have chosen the word “exploration” carefully. This chapter cannot be an exhaustive review of the scholarship related to the improvement of teaching and learning. Such a review would require an entire volume, if not more. Rather, we attempt here to understand the nature of this scholarship by providing representative and, hopefully, informative examples along with some categories.

While communities of practice tend to share common beliefs, the notion of “foundations” is still relative to context and tradition. When we use the word “foundation,” we are drawing on Entwistle’s (1997) identification of the “need in staff development to start from a powerful and simple idea which conveys complex pedagogical principles in readily accessible ways” (p. 214).

In our experience, which is derived from a North American research-intensive university, the examples we present in this chapter would generally be called foundational. Though we have endeavored to include other perspectives, international and institutional, the reader may well wish to include other work that he or she would call foundational. Our purpose here is not to provide a definitive listing of foundational work; rather, to provide a possible framework with which to discuss and understand such work.

We do this in the hope that those of us in the field can delve into the literature and present the scholarly justifications for our recommended practices to colleagues in more targeted and less daunting ways. Current use of scholarly foundations varies across educational development settings, in both its prevalence and nature. The

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Professional and Organizational Development Network (POD) in the United States asserts that we are ethically bound to learn from these foundations when they state in their ethical principles document that educational developers must “seek out knowledge, skills and resources continually to under gird and expand their practice” (POD Network in Higher Education, 2010). Our proposed framework is intended also to help us understand some of this variation in our field.

We begin this chapter with a brief overview of the nature of educational development work and centers. Overall, our focus is on three central aspects of educational development: (1) facilitating good teaching practice; (2) engendering change at the institutional level; and (3) measuring the impact of our work. Each of these aspects has a significant scholarly foundation that can be demonstrated and explored. We then examine some of the implications of doing this work within the research-intensive university. Next, we investigate the role that theory and research have played in our educational development work and consider how we can make best use of these. In the latter part of this chapter, we take a look at our role in supporting changes in institutional culture as these pertain to teaching and learning. Finally, we examine some of the ways in which the impact of our educational work has been studied.

The Nature of Educational Development

The term “educational development” is one of a number that refer generally to structured attempts to improve teaching and, ultimately, students’ learning in higher education. Other terms used to describe this work include “academic development,” “faculty development,” “staff development,” and “professional development.” For most people working in the field, these terms are not synonymous. The differences in meaning may depend upon geographic region and individual interpretation of connotation, especially regarding how holistic this development is intended to be (Brew & Boud, 1996). Some programs focus exclusively on teaching practice; others will encompass career development or more general issues such as retirement planning.

For the purposes of this chapter, we focus our attention primarily on institution-wide educational development initiatives addressing teaching and learning—“centers” as they are called generically. This focus is not intended to downplay the value of faculty- or discipline-based initiatives. Indeed, educational development may well be moving toward more local initiatives becoming the key driving forces in the field. At the same time, institution-wide centers for educational development are common in many parts of the world, and the challenges they face are significant regarding the identification and application of their scholarly foundations to their practice.

A survey of Canadian educational development centers revealed a wide range of structures and varied activities (Simmons et al., 2010). In Canada, like other parts of the world, educational development centers began to emerge in the 1970s. This

emergence has continued into the present day, with new centers being established in the last 5 years. The last 10 years has seen some centers amalgamate with other units on campus, primarily those related to educational technology, to form much larger centers. Of the 57 institutions responding to the Simmons et al. survey, 9 reported an amalgamation.

The number of people working in a given center will depend, in part, on whether there has been such an amalgamation. Staffing numbers vary from 4 or 5 to over 20 people concentrating on educational development. When technology, classroom services, and other responsibilities are added, these numbers grow considerably. Some centers have ample space and are located in the heart of the campus. Others operate in much more confined quarters, perhaps out on the physical edges. The range in unit size has implications for workload, which in turn affects the amount of time educational developers have to keep up with the scholarship of their field.

In addition to reasonably well-staffed centers and units, a considerable amount of educational development is conducted by individuals working either as a “center of one” or as part of a committee. A study of 300 institutions in the United States revealed that 31% categorized their educational development work in one of these ways (Sorcinelli, Austin, Eddy, & Beach, 2005), though the trend has been toward larger, more centralized units.

In the United Kingdom (UK), people working in these educational development units report cautious optimism regarding their future stability, though the landscape continues to change in terms of economics and governmental and institutional expectations for learning and teaching support (Gosling, 2008). In the UK, and in many other parts of the world, people working in educational development feel that they are in competition with their institution’s research interests and the resource allocations associated with those interests (Gosling, 2008). As we will describe further in the next section on research-intensive universities, educational development units face the ongoing challenge of helping an institution enhance teaching and learning while the institution balances this effort with research support. In this context, educational development units in the UK and elsewhere must manage the dual identities of being an “academic” and “service” unit (Gosling, 2008). The majority of units in the UK conduct or support scholarship in teaching and learning, help develop policy, and at the same time administer accredited courses in teaching and learning for new faculty members, or academic staff as they are called outside North America (Gosling, 2008).

A comprehensive study within Australian educational development centers (Holt, 2010) revealed a similar range of activities, from individual consultation with teaching staff to institution-wide conferences and the provision of teaching awards. While differences in national context certainly exist (Brew, 2006), the range of activities found by Holt and Gosling would be common in North American, Asian, and European higher education institutions (HEIs) as well. Indeed, our own opportunities to work in other countries have left us with the distinct impression that similarities in approaches and challenges in educational development outweigh differences from country to country.

Doing Educational Development Work in the North American Research-Intensive University

In the North American research-intensive university, as in universities the world over, faculty members are rewarded primarily for their research activities, in particular the production of scholarly publications and the garnering of research grants (Furco, 2001; Gappa, Austin, & Trice, 2007; Rhode, 2006).¹ The degree to which faculty members advance in their careers depends largely upon their success in these activities because institutional rewards are closely tied to research productivity. Although many campuses have modified their tenure and promotion policies to encourage and recognize broader forms of scholarship, including the scholarship of teaching and learning, there remain many barriers to changing academic culture (e.g., in the United States, see O'Meara, 2006).

Research-centered expectations and norms that permeate various choices faculty members make “. . .can be a disincentive for faculty at research institutions to explore and pursue activities that are perceived to be nonscholarly and nonresearch focused” (Furco, 2001, p. 69). It is possible that faculty members might include educational development within this category because, within academe, our work is frequently misunderstood or unfamiliar.

One of the dominant perceptions about educational development is that it is limited to conveying teaching tips and “tricks.” Although providing sound foundations for effective teaching is indeed an important aspect of educational development work, our professional aims are much broader than providing practical suggestions for teaching improvement. The scope of our work now includes a wide range of programs, services, and resources designed to support and enhance educational effectiveness in higher education; it also encompasses research into our practice (McDonald & Stockley, 2008).

However, even though research into educational development activities is increasing, it is still a fairly new phenomenon (Macdonald, 2003). Therefore, it is not surprising that faculty members still regard educational development centers as “service units” where the work done, albeit potentially helpful, is not necessarily scholarly. When the dominant perception within a research-intensive institution is that educational development is a technical matter, academics will be inclined to dismiss our work as irrelevant to their practice. When this is so, faculty members will

¹In this chapter, we focus our attention primarily on educational development within the research-intensive university. Although we recognize that educational development centers and initiatives are widely occurring at many community colleges, liberal arts colleges, and other HEIs, we have chosen to locate our work in the doctoral-granting, research-intensive university for two main reasons: first, because the cultures of such institutions often prompt us to take a scholarly approach to educational work; second, because it is the context within which our own work and research are situated. Despite our chosen focus, we believe that the content of this chapter will be relevant to educational developers and higher education researchers working in a wide range of HEIs, across North America and internationally.

put less emphasis on developing their teaching practice than they do into furthering their program of research.

Nevertheless, the field of educational development is maturing (Gosling, 2001) and scholars in the field are advocating for and modeling educational development that is seen as an academic activity (Smith and Bath, 2003). A look at publications in the field shows that educational developers are reflecting on their work, demonstrating an orientation to questioning rather than presenting solutions, using existing research to ground inquiries, and collecting data to pursue research questions. That we should want to establish the field as legitimate within higher education studies is to be expected as many of us within educational development come from disciplines where we have established ourselves through our research and teaching. Less acquainted, perhaps, with research into support for teaching, we are nevertheless familiar with established scholarly conventions. These include generating new knowledge; making use of existing theories; finding information and evidence to advance understanding; and disseminating findings through publications, teaching, and other public presentations (Brew, 2001; Knapper, 2010). These academic attitudes and practices are very relevant to educational development.

Given the above, one might anticipate that educational developers would model, and conform to, academic norms in their work with faculty members, administrators, and graduate students. When we structure our work and programs so that these are consistent with core academic values, faculty members may be more inclined to get involved with educational development to improve their teaching practice. The literature indicates that faculty members have a strong preference for activities and relationships that honor, promote, and support the core academic values in higher education: academic freedom, autonomy, collegiality, and peer review (Gappa et al., 2007). Once faculty members recognize that we are taking a scholarly approach to our work and are respectful of core academic values, they may be more motivated to engage with educational development.

The Nature of Scholarship in Educational Development: From the Apocryphal to the Research-Based

We have made the point that, in research-intensive institutions (and very possibly in *all* HEIs), those who teach are more likely to adopt a given practice if they believe it is supported by good evidence. In this section, we will explore this point further. In doing so, we cannot provide a comprehensive review of the literature on teaching and learning that might be called upon as evidence. Instead, we will look at some widely espoused tenets that are common to educational development work and explore the literature associated with them.

In terms of the things we hold near and dear in educational development, what types of literature exist and what does this literature tell us? This is a cogent question because, as educational developers, we may share beliefs about what constitutes good educational practice but not have a keen awareness of the evidence (or lack thereof) associated with those practices.

The evidence related to teaching practice is vast and varied, and the demands of educational development work are already extensive without expecting an intimate knowledge of such evidence. Some concise summaries of evidence exist, but we do not have the benefit of regularly published literature reviews and resources like medicine's Cochrane Collaboration or public education's Campbell Collaboration to help us keep up with the evidence.

In spite of the existence of such resources, many professions find it challenging to effectively inform daily practice with sound evidence. In the health sciences, for example, much has been written about barriers to what those disciplines call "evidence-based practice" (see Haynes & Haines, 1998). Haynes and Haines (1998) cite a number of barriers that apply equally well to teaching and learning in higher education. They include the following: the size and complexity of the research; the access to that research; and the need for more continuing education programs to help practitioners translate research evidence into practice.

It is important to start with the point that evidence comes in many forms. Later in this chapter, we will discuss the challenges that multiple research paradigms provide for educational developers. Here, we acknowledge that differences exist among academics in their preference for particular kinds of evidence. For example, in this chapter, we will use the word "empirical" to describe some kinds of evidence, but do not intend to imply that empirical evidence is preferable or privileged in some way. However, we would argue that the kind of evidence sought should match the kind of claim it is intended to support. As such, empirical evidence is preferred in support of empirical claims (for such things as percentage of material recalled, numbers of students preferring a particular instructional style, or the prevalence of characteristics in a population).

Furthermore, the phrase "research has shown that . . ." is different from "the opinion has been expressed that . . ." The latter phrase can be very valuable in discussions about teaching and learning. Our point here is that we should not use the two phrases interchangeably.

Works of art, metaphor, opinion papers, ethnography, quantitative research, and many other forms of scholarship can all be viable foundations for our work. As educational developers, we have an obligation to know what form of scholarship is at the foundation of that which we are espousing at any given time.

To help us do this, we start with the proposition that commonly cited tenets in educational development fall into one of three categories: the apocryphal, the theoretically plausible, and the research-based. Examples can be found from each of these categories that have had significant influence on educational development and teaching practice.

The Apocryphal: Ten Percent of What We Read

The Oxford English Dictionary (2001) defines "apocryphal" as something that is commonly used but unlikely to be true. Thus, to call a claim apocryphal is to call into question its veracity in spite of the possibility that the claim is widely held.

Most educational developers are familiar with the following tenet:
We learn

- 10% of what we read;
- 20% of what we hear;
- 30% of what we both see and hear;
- 50% of what we discussed with others;
- 80% of what we experience personally;
- 95% of what we teach to someone else.

You may have made reference to this or you may have seen it in a poster adorning a wall in an educational development center.

This tenet is most often attributed to William Glasser; however, citations do not refer to a specific publication of Glasser's, much less any empirical support for the percentages. If you ever find yourself with a free moment, try typing "10% of what we read" into Google. The results indicate that there have been a few published papers attempting to locate the source of this tenet. Notable among these papers is a 1987 paper, "Using Kolb's Learning Inventory to Improve Student Learning" (Stice, 1987). In support of Kolb's assertion that experience aids learning, the author presents a table with numbers that are comparable to those featured in the quote attributed to Glasser, though the table omits the last point—"95% of what we teach to someone else." The source of the table is a study "from the 1930s or 1940s" (Stice, 1987, p. 293) conducted by the Socony-Vacuum Oil Company. To the best of our knowledge, no paper has been found that directly reports on the findings of the oil company's study.

Referring specifically to Kolb's learning states, Stice asserts that retention is enhanced as more of the states are used. Specifically, he reports that 20% is retained if only abstract conceptualization is accessed; 50% if reflective observation and abstract conceptualization are used; 70% if concrete experience, reflective observation, and abstract conceptualization are used; and 90% if all four are involved (the fourth being active experimentation). The source of these numbers, as cited by Stice, is a private discussion with a colleague.

More recent research (Lord, 2007) has tested the accuracy of the numbers associated with the Glasser-attributed quote, sometimes called "the cone of learning." Lord used a range of methods corresponding with the levels of "the cone" to teach students how to solve five-piece jigsaw puzzles. These methods ranged from giving a mini-lecture to letting them work on the puzzles to having them teach other students how to solve the puzzles. Lord found that, as the methods moved down "the cone" (which is to say they became more engaging and active) more students could complete the puzzle in the allotted time. He translated these numbers into percentages that approximated those presented in the Glasser-attributed quote and the order of methods in the cone.

This is helpful research, though more is needed. Lord's students were asked to learn a task that was primarily visual and behavioral in nature. Given this, we cannot be surprised that primarily verbal teaching methods were relatively ineffective.

Also, we are not told how much time each of the methods took, so the findings can be confounded by simple time-on-task. The best conclusion to draw from Lord's study is not that the "cone of learning" is universal, but that pedagogy should match desired learning outcome.

Thus, the source of one of our most widely referenced tenets cannot be ascertained.² It is apocryphal, not just because of this, but because it is "unlikely to be true," in keeping with the Oxford Dictionary definition. Lord's study allows for the placement of numbers in "the cone" for a specific task, though we simply cannot place absolute numbers in this table, and we might not be able to rank order the methods of learning either. This is because the extent to which anything is retained in memory is influenced by a myriad of factors. The means of encoding the information, which is at the heart of the table, represents but one set of these factors. There is also the *content* of the message to take into account, considering such things as the complexity of the message and its appeal to emotion. This helps explain why there will be some things you have been told that are extremely memorable, regardless of what else you hear, see, or discuss with others.

The apocryphal nature of the quote does not make it useless. It invites us to consider the possibility that we should use a variety of methods in our teaching. It is the numbers that are the main problem here—numbers that are made even more problematic when presented in resources using the phrase "research has shown that . . ." A more appropriate introduction to the Glasser-attributed quote was presented in a keynote address from Piet Kommers, who called the quote "poetry" (Kommers, 2008). Much has been learned from poetry. As educational developers, we just need to be clear about the kind of scholarship to which we are referring.

The Apocryphal: A Generation of Multitaskers

To say that we learn 10% of what we read is intriguing, but as a generalization, it cannot be supported by psychological theory. This is also the case for claims that an entire generation of people is better at multitasking than are those who came before them. Similar to the "10% of what we read" example, the literature on the current generation of learners is replete with the claim that they are multitaskers, yet empirical evidence for this claim is hard to find, if it exists at all. The statement that current students' strengths include "multitasking, goal orientation, positive attitudes, and collaborative style" (Oblinger, 2003, p. 38) is more likely to stem from conclusions drawn by social commentators and business consultants (the above quote cites the following source: http://www.generationsatwork.com/articles_millennials.php Accessed: February 18, 2010). Attempts to understand today's students are valuable, but the task of finding reliably generalizable attributes is daunting.

The claim that today's learners are more likely to be multitaskers has had an impact on everything from learning space design (Brown, 2005) to classroom rules

²For a more detailed review of the search for the source of this tenet, see Atherton (2009).

(Glen, 2010). To fairly assess claims about multitasking, it is important to define the phenomenon, something rarely done in articles commenting on the attributes of generations of students. Specifically, it is important to make the distinction between simultaneous attention to tasks being performed in parallel and the rapid shuttle back and forth between tasks. When people use the word “multitasking” they could be referring to either of these processes. The distinction is important because the human brain is notoriously poor at dividing attention between two simultaneous tasks, especially if even one of them is complex (Dux et al., 2009). On the other hand, the brain can be trained to increase the speed with which it shuttles between tasks (Dux et al., 2009).

The finding by Dux and colleagues that shuttle speed can be improved might suggest that practice at shuttling, something the current generation of students presumably is getting lots of, could make them better multitaskers, as defined by quick shuttling. The problem is that, as soon as one of the tasks becomes more complex and thus demands a greater cognitive load, something must be sacrificed. Suddenly, instead of shuttling quickly between tasks, the person is being distracted off one task for the sake of another that, for various reasons, is demanding the lion’s share of the person’s cognitive resources.

This could explain the finding that people who spent a great deal of time doing what has been called media multitasking actually performed *worse* on tasks involving shuttling (Ophir, Nass, & Wagner, 2009). These people had, in fact, become more susceptible to distraction. This, in turn, helps explain why talking on a cell phone while driving can produce impairment at least as profound as driving with a blood-alcohol rating of 0.08 (Strayer, Drews, & Crouch, 2006), with reaction times slowed by 20% (Collet, Clarion, Morel, Chapon, & Petit, 2009).

While multitasking is not entirely mythical, research in this area indicates that it is a mistake to characterize today’s learners as being good enough at such shuttling to warrant modification of learning spaces to accommodate, much less encourage, such activity. Furthermore, concerns regarding students’ tendencies to surf the web and listen to MP3 players in class are warranted and should not be quelled by false assurances that “students these days” are good at this kind of task juggling.

In sum, apocryphal evidence must be identified as such. This does not mean it is of no value. The “poetry” of the Glasser-attributed quote contains wisdom. Also, it is worth knowing that today’s students are more likely to harbor the false belief that they can juggle multiple tasks and still learn well. At the same time, we must be cautious when we encounter generalized claims with statistics describing retention rates or a list of adjectives describing an entire generation.

The Theoretically Plausible: Seven Principles of Good Practice in Undergraduate Education

In contrast to the claims regarding memory function and multitasking, educational developers refer frequently to claims that are not based on empirical evidence, but still do not contradict widely held claims that are based on such evidence. An apt

example is one of the most widely accepted good practice documents, Chickering and Gamson's (1987) "Seven Principles of Good Practice in Undergraduate Education."

When it was published in the late 1980s, "Seven Principles" was a godsend for educational developers. It presented a concise, commonsense list of practices intended to enhance learning. It is continually referred to as being research-based and scholarly. Thus, in addition to being very usable, it helped answer the pressing question: "How do you know this works?"

To refresh our memories (even if you might remember only 10% of this information by reading it) here are the seven principles in a nutshell.

Good practice in undergraduate education:

1. Encourages contacts between students and faculty.
2. Develops reciprocity and cooperation among students.
3. Uses active learning techniques.
4. Gives prompt feedback.
5. Emphasizes time on task.
6. Communicates high expectations.
7. Respects diverse talents and ways of learning

(Chickering & Gamson, 1987).

Imagine an educational developer presenting these principles in a university-wide workshop. Someone says, "You have said these principles are based on research. Can you describe some of that research for us?" How can the educational developer respond in ways that will increase the likelihood these good practices will be incorporated into the participant's daily practice? This is no simple task, given that, in responding, one will probably be required to bridge research paradigms more on this challenge later. Furthermore, when one delves into the literature associated with some of our fundamentally espoused teaching practices, the research might not exist in a form we would expect.

For example, the original Chickering and Gamson paper, published by the American Association for Higher Education (AAHE), featured an interesting and extensive reference list, but none of these references was cited in the text of the paper. Rather, concrete examples were provided of how a principle might be manifest in teaching without the provision of any data on the effectiveness of those examples.

This is not to say that there is a paucity of research on the seven principles; quite the contrary. However, most of this research was published *after* Chickering and Gamson's 1987 paper. Thus, it would be better to characterize this paper as an important "thought paper" drawn generally from educational research, stimulating a great deal of good research. Thus, we would place it in the theoretically plausible category.

We use the word "theory" to describe attempts to explain and understand research findings and phenomena (Blaxter, Hughes, & Tight, 2001; May, 1997). Thus the term "theoretically plausible" is used in this context to describe an assertion that is consistent with accepted explanations for learning. The term "theoretically

plausible” is not synonymous with “theory driven,” however. Chickering and Gamson do not make explicit reference to theory in their 1987 paper. In fact, an analysis of higher education research published in the UK and Australia in 2000 found that fewer than half of the papers and books made reference to theory (Tight, 2003). Tight suggests this might be due, in part, to the fact that the demand for evidence-based practice puts more weight on evidence than theory. Consistent with this assertion, research investigating Chickering and Gamson has focused more on finding evidence than on grounding the principles in theory.

Two researchers who have sought such evidence are George Kuh and Nick Vesper. Kuh and Vesper (1997) have argued that the research inspired by Chickering and Gamson has created a constructive focus on educational process—what students and teachers are doing—rather than merely on outcome—what grades or scores students achieve. This is not to say that educational outcomes are not important or of interest. Rather, Kuh and Vesper might argue that, when processes such as those implied by the seven principles are linked to successful learning outcomes, process research can be used to inform policy and practice. It tells us what we should be *doing*. It focuses on the “how” more than the “what.” Indeed, Kuh, Pace and Vesper (1997) found encouraging correlations in the 0.3–0.4 range between evidence of Chickering and Gamson’s good principles and estimated educational gains.

If you have pursued educational research, you will know that the measurement of “educational gains” is a study in itself. For example, a considerable amount of research uses self-report measures to assess educational gain. The assumption, put bluntly, is that if students tell us they have learned, then they have. While student insights into their own learning represent one important source of data, they cannot be taken as perfectly valid measures of educational gain. In other words, such reports might be measuring something other than educational gain. In fact, Bowman (2010) reports that there is a poor relationship between such self-reports and more objective measures of learning.

Pascarella, Seifert and Blaich (2010) point out that the widely used National Survey of Student Engagement (NSSE), designed by George Kuh and colleagues, relies entirely on self-report, both in the assessment of good practice and in the educational gain. In the NSSE, students are asked to report on the frequency of certain behaviors that are considered indicative of engagement with learning environments, such as asking questions in class and writing drafts of term papers. With the limitations of self-report data in mind, Pascarella et al. conducted a study across 19 institutions in which the outcome measures were *tests* of educational gain rather than *reports* of it. Specifically, they used measures of outcomes that are commonly pursued in liberal arts programs: effective reasoning and problem solving; moral character; inclination to inquiry and lifelong learning; intercultural effectiveness; and personal well-being (Pascarella et al., 2010, p. 19). Of course, we still must ask whether these are the most relevant outcomes and whether the measures they chose were valid. Pascarella et al. take the time to provide a clear description of each outcome as well as the psychometric properties of the instruments they use to measure them (Pascarella, Seifert, & Blaich, 2008), so readers can make up their own minds regarding the relevance of the outcomes and validity of the measures.

The bottom line here is that Pascarella and colleagues did, indeed, find significant positive correlations between the scores on the majority of NSSE subscales and these outcomes. Their conclusions, then, are consistent with Kuh and Vesper's claim that we can use process-oriented research relying on well-constructed self-report measures to guide policy and practice.

This example demonstrates that it is helpful to have some familiarity with the kinds of research that have been spawned by the seven principles. For example, a number of research studies have used the College Student Experience Questionnaire (CSEQ; Pace, 1987) as a kind of proxy measure of the use of some of the seven principles. Though the CSEQ preceded Chickering and Gamson's original paper, the CSEQ happens to contain many items that assess the extent to which certain Chickering and Gamson principles are being followed, for example, faculty–student contact, cooperation among students, and active learning (Kuh & Vesper, 1997). Kuh and Vesper have thus shown that the CSEQ can be used as a tool for process-based research stemming from Chickering and Gamson's principles. Positive correlations have been found between CSEQ scores and measures of educational gains (Kuh & Vesper, 1997).

Another good example of such research was conducted by Cruce, Wolniak, Seifert, and Pascarella (2006). Cruce et al. measured the relationship between students' cognitive development and practices consistent with the seven principles, using measures of the principles taken from the CSEQ and other scales. Cruce et al. also made the significant contribution of controlling for a number of other factors known to affect student performance and development, such as demographics and institution type. To measure cognitive development, Cruce and colleagues used the National Survey on Student Learning (NSSL), comparing entry-level scores with scores at the end of first year.

They used factor analysis of 19 items from the CSEQ and NSSL to generate three main factors, called "good practice dimensions." These dimensions were called effective teaching and interaction with faculty, interactions with peers, and challenge/high expectations. See Table 8.1 for a list of specific practices associated with each of these dimensions.

These dimensions of good practice were positively correlated with students' orientation to learning (e.g., openness to diversity and challenge, learning for self-understanding, internal locus of attribution for academic success, preference for higher-order cognitive tasks, and positive attitude toward literacy). They were less well correlated with students' more general cognitive development (general education skills and competencies) and tended to help students with lower entry-level scores more.

This literature leads to at least two general conclusions: (1) we can ascertain the extent to which at least some of the seven principles are being followed and (2) there is a positive relationship between educational outcomes and the use of these principles. Thus, while the Seven Principles of Good Practice in Undergraduate Education might not have been derived directly from data on teaching practice and learning outcomes, they are sufficiently linked to plausible theory to have generated convincing subsequent research using such measures.

Table 8.1 Good practice dimensions

Dimension	Some associated sources of data
Effective teaching and interaction with faculty	<ul style="list-style-type: none"> ● Instructor high-order questioning ● Instructor feedback to students ● Instructor's clarity ● Instructional organization and preparation
Interactions with peers	<ul style="list-style-type: none"> ● Non-classroom interactions ● Cooperative learning ● Peer interactions (course and non-course related)
Challenge and high expectations	<ul style="list-style-type: none"> ● Essay exams ● High-order examination questions ● Textbooks or assigned readings ● Term papers or other written reports

Note: Based on Seven Principles of Good Practice (Chickering & Gamson, 1987), the College Student Experience questionnaire (Pace, 1987), and the National Survey on Student Learning. Adapted from (Cruce et al., 2006).

The Theoretically Plausible: Learning Styles

Another staple in the repertoire of many educational developers is the notion of learning styles. A fundamental claim of the construct is compelling and intuitively reasonable—individual differences exist in the ways people learn. A further claim is that these differences can be reliably categorized and measured. This second claim has not held up well to research scrutiny, however.

Jeffrey Koob and Joanie Funk (2002) have published a comprehensive review of the literature assessing the psychometric properties of Kolb's widely used Learning Styles Inventory (LSI). Koob and Funk identify poor test–retest reliability coefficients for the LSI. In other words, the same student may score differently on repeated administrations of the LSI. This raises the possibility that the constructs the LSI purports to measure are not stable within learners.

Researchers in the UK conducted a comprehensive analysis of 13 learning styles models (Coffield, Moseley, Hall, & Ecclestone, 2004). Consistent with Koob and Funk, Coffield et al. concluded that the psychometric properties of measurement inventories were generally poor. Only 3 of the 13 models evaluated had acceptable psychometrics (Allison and Hayes' Cognitive Styles Index; Apter's Motivational Styles Profile, and Vermunt's Inventory of Learning Styles). Regarding learning styles, Coffield and colleagues concluded that “clear simple, but unfounded messages for practitioners and managers have too often been distilled from a highly contested field of research” (p. 118).

Coffield et al. provide four reasons why much of the learning styles work has yielded questionable results. First, the research data from which styles are derived most often take the form of self-report. Second, the survey items themselves are often poor. Third, a number of theorists have significant financial investment in the

models; and fourth, even scales with reasonable psychometrics yield results that account for small amounts of variance in learning outcomes.

Coffield et al. do make the point that not all learning styles models are created equal, and that they can be placed on a continuum from those that view learning styles as fixed attributes to those that talk of flexible approaches to learning. Those closer to the latter end of the continuum are preferred.

This calls into question the practice of using models that present learning styles as fixed attributes to categorize learners. For example, the LSI does not tend to correlate well with learning outcomes. Moreover, there has been very little success in finding teaching styles that match well with learning styles such that learning outcomes are improved (Coffield et al., 2004).

Still, the notion that individual differences exist among learners remains compelling and is used by educational developers to justify the need for instructors to expand their pedagogical repertoires and pay more attention to how their students approach learning tasks. These cannot be bad things to pursue. Numerous instruments have been developed in this pursuit. Some will have better psychometric properties than others. None will provide a “gold standard” for measuring people’s learning tendencies or styles. Indeed, instruments designed to measure any human characteristic are limited by the abstractness and within-person variance of such characteristics.

Longitudinal research is required to determine how consistently people maintain a given learning style. Some longitudinal research indicates that learning styles change over time, as measured at various points across a program of study. This research presents averages across groups, however, and changes are interpreted as being consistent with program goals (e.g., Kolb & Kolb, 2005; Mentkowski & Strait, 1983). Even so, such changes suggest that ways of learning are modified to meet the demands of the learning environment.

This is quite different from what has been called the “meshing hypothesis”—that optimal learning environments should be constructed so that they mesh with a student’s preferred learning style. A comprehensive review of the literature on learning styles concluded that, while people are quite willing to state preferences in terms of approaches to their learning, there is insufficient research to support the meshing hypothesis (Pashler, McDaniel, Rohrer, & Bjork, 2009).

Of course, the “meshing,” or matching, of learning environments to the learner is a key element of good teaching. The question here concerns just what aspects of the learner can be reliably assessed and then taken into account. Learning styles generally do not prove reliable enough for this purpose. Other attributes, such as skill level, can. The difference here is that good assessment of skill or developmental level can tell us where the student *is* in their learning; learning styles inventories attempt to measure general *approaches* to that learning.

Even when working with more concrete factors such as skill levels, the matching of learning environment to a learner’s stage of development is challenging (Vygotsky, 1978). Back in the 1970s, Cronbach and Snow identified these challenges in what they called the “aptitude by treatment interaction” (Cronbach & Snow, 1977). They pointed out that social factors and complex individual

differences make it difficult to predict outcomes resulting from interactions between student characteristics and what they called “treatments.”

Taken collectively, this research on learning styles would suggest that measures of learning styles might be useful as one way to assess how group tendencies in learning shift over time. However, research has not shown that educational developers should recommend the crafting of multiple learning environments to match individual learning styles. This distinction illustrates clearly the notion of theoretical plausibility in that there is clear theoretical support for the notion that students’ views of knowledge and learning change over the course of their time in higher education (Perry, 1999). Similarly, the foundation of much of Kolb’s work on learning through experience is based on long-standing theories forwarded by John Dewey and Kurt Lewin.

In summary, tenets that are linked to plausible and, in some cases, long-standing theory are prominent in educational development. Research that has flowed from these tenets should be considered when those of us in educational development talk about a given tenet in terms of its utility and applicability.

Research-Based Foundations: The Work of John Bransford and Colleagues

There is another category of scholarly foundations for our work featuring summaries of research evidence. One example is Bransford and colleagues’ work presented under the heading *How People Learn* (Bransford, Brown, & Cocking, 1999). In this work, the authors draw from extensive research in such areas as cognitive science, educational psychology, and developmental psychology. Their objective is to distill this work into a manageable number of principles that could guide the design of learning environments.

They focus considerable attention on factors that affect learners’ ability to transfer what they have learned to novel contexts. In their discussion of learning and transfer, they conclude broadly from an extensive literature that:

- Initial learning is necessary for transfer, and a considerable amount is known about the kinds of learning experiences that support transfer.
- Knowledge that is overly contextualized can reduce transfer; abstract representations of knowledge can help promote transfer.
- Transfer is best viewed as an active, dynamic process rather than a passive end-product of a particular set of learning experiences.
- All new learning involves transfer based on previous learning, and this fact has important implications for the design of instruction that helps students learn (Bransford et al., 1999, p. 41).

Would these conclusions lead us in a radically different direction from those presented by Chickering and Gamson, Kolb, or Glasser? Very possibly not.

However, when asked by colleagues to describe the foundations for these directions, it will be easier to provide research-based answers when talking about Bransford's conclusions. In some contexts, this might be a good thing to be able to do.

As we have done with our other examples, we now will take a more detailed look at some of the research associated with the claims made in *How People Learn*. In their chapter that focuses on transfer, one of the points drawn from research is that transfer is an active rather than passive process. It should be viewed as deliberate rather than accidental or naturally occurring. To demonstrate this, Bransford et al. cite a study by Gick and Holyoak (1980). In the study, college students were given a description of a fortress that could be accessed by a series of roads radiating from it. The problem was that each road contained mines that would detonate with heavy traffic. Knowing this, a military general planning to storm the fortress deployed his troops evenly to each road, distributing the weight evenly so that no one load would be enough to detonate a mine.

The students were then given the following problem: A cancer patient has an inoperable tumor requiring strong radiation. The problem is that one ray of sufficient strength would damage healthy tissue so badly that it is not a feasible solution.

One group of students was left to their own devices to solve the radiation problem. Another was told explicitly that information from the fortress story would help them. Few students in the first group solved the radiation problem. However, over 90% in the prompted group recommended sending a set of weak rays into the body from different angles such that they converged at full strength at the tumor site.

Of course, teaching students to transfer requires processes that are considerably more sophisticated than simply telling them to transfer. For example, transfer is facilitated when the original context and the new context share elements in common. This is complicated by the fact that few contexts share blatant elements in common, but they might share abstract elements. This would mean that teaching students how to look for these abstract elements that relevant contexts share would facilitate transfer. Bransford et al. present a number of studies from various disciplines indicating that teaching abstract elements facilitates transfer more effectively than does teaching specific shared elements.

It would be inaccurate to characterize *How People Learn* as a resource that takes a myriad of complex educational research studies and distills them to a manageable collection of simple principles. Bransford et al. do not “dumb down” complex cognitive processes associated with learning. As such, it would not be enough for an educational developer to simply send instructors to the *How People Learn* website (http://www.nap.edu/openbook.php?record_id=6160. Accessed: February 22, 2010), even though the entire book is freely accessible there. Rather, in planning workshops that link learning theory and research to practice, it would be worth the time for the workshop facilitator to visit this site to develop a familiarity with at least some of the research upon which the books' conclusions are based.

Research-Based Foundations: Taking Stock

In February 2010, McGill-Queen's University Press published *Taking Stock: Research on Teaching and Learning in Higher Education* (Christensen Hughes & Mighty, 2010). *Taking Stock* presents 15 chapters that either summarize the research related to a particular aspect of teaching and learning or provide a rationale for why such research is not standard fare for those who teach in higher education. The book is written in a way that should be accessible to a wide range of academic backgrounds.

Two chapters of key relevance to the current discussion are Noel Entwistle's (2010) overview of research on learning (*Taking Stock: An Overview of Key Research Findings*) and Keith Trigwell's (2010) chapter presenting research on the relationship between teaching approaches and learning approaches (*Teaching and Learning: A Relational View*). Here, we present a summary of each chapter to provide a sense of their content and their importance as scholarly foundations to the work of educational developers.

In addition to presenting key research findings, Noel Entwistle provides a useful critique of research methods—from lab studies to questionnaires to in-depth interviews. This critique is relevant to the research presented in this chapter, some of which relies heavily on survey methods (e.g., Kuh & Vesper, 1997), psychological experimentation (Bransford et al., 1999), or in-depth interview (Trigwell & Prosser, 2004). Entwistle invites us to consider what has been called ecological validity (Coolican, 1992), or the extent to which research findings can be applied in practice.

In his critique of methods, Entwistle also invites us to consider what we mean by learning outcomes. Are we talking solely about the attainment of behaviorally defined objectives or do we mean something more abstract and meta-cognitive? The answer to this question will determine the kind of research one considers relevant. For example, behavioral objectives might be best attained via behavioral approaches. Thus, research assessing the effects of repetition or successive approximations of complex behaviors would be of interest. On the other hand, if learning outcomes are construed in more abstract ways, as was the case for Pascarella, Seifert, and Blaich (2010), discussed earlier in this chapter, we would be interested in research that measures the goals of liberal arts education. Similarly, the term "learning gains" used by researchers such as George Kuh carries its own set of implications regarding research methods, perhaps suggesting the use of pre-test–post-test designs.

Entwistle also identifies key theories in the quest to understand students' thinking regarding the nature of knowledge. For example, he describes the work of William Perry (1999), whose interviews of undergraduates yielded a taxonomy of intellectual development, moving from a belief that knowledge is either right or wrong to knowledge being relative and the result of social construction.

Marton and Säljö's (1997) notion of deep versus surface approaches to learning is also described. Students adopting a surface approach employ rote memorization in an attempt to be able to repeat definitions of concepts. By contrast, a deep

approach strives for much more thorough understanding and an ability to apply concepts across contexts. These approaches are not akin to student characteristics. Rather, they are deliberate strategies employed in response to students' interpretations of what a given learning environment requires. Like Perry, Marton and Säljö used interviews as their main method of data collection.

The work on approaches to learning and the deep/surface dichotomy have been accepted for many years with little critique. One notable exception is a paper by Tamsin Haggis (2003), who has suggested that this lack of critique can be attributed to the fact that deep approaches to learning mirror the approaches of most academic staff. Rather than contest the construct of deep approaches to learning, those in higher education hope to create students who are images of academic staff. Haggis maintains that we hold stubbornly to the value of deep approaches even though it has been shown that it is very difficult to change a student's approach from surface to deep and that surface approaches have been proven "very successful" (p. 93) in some contexts. Haggis does not define success in this case.

Haggis also points out a contradiction in the discourse related to approaches to learning. On the one hand, there is the claim that approaches to learning are responses to the demands of a particular learning context while, on the other hand, examples are provided of surface and deep approaches used by different students in *the same context*, implying that the approach is a function of trait-like individual differences among students. As an alternative to the approaches to learning constructs, Haggis offers the use of "academic literacies" to help students learn within specific disciplines. If, in our teaching, we are more explicit about the genres and analytic customs of our disciplines, students will be more likely to find their places within the disciplines and, consequently, learn from them.

Entwistle would not be dismissing the importance of "academic literacies" when he cites research to indicate that students' perceptions of their learning environments affect their learning within those environments. This research is particularly relevant to the use of student surveys of teaching, surveys that tend to measure student perceptions. Educational developers often find themselves in the position of helping instructors both interpret student survey data and make relevant changes as a result of these interpretations. We also can be called upon to justify the use of such data in the first place. One of the criticisms leveled at student evaluations of teaching is that they measure perceptions rather than realities. Thus, the literature reviewed by Entwistle becomes particularly cogent, as it underscores the importance of these perceptions.

In terms of face-to-face teaching, Entwistle concludes that student perceptions of clarity, level of difficulty, pace, structure, explanation, enthusiasm, and empathy are particularly important. Research cited in Perry and Smart (2007) links perceptions of these elements with learning outcomes (e.g., Abrami, d'Apollonia, and Rosenfield, 2007).

Another area reviewed by Entwistle relevant to educational development is disciplinary differences in teaching. He reviews the work of Janet Donald (1994), in which she lists important similarities and differences among five disciplines. Donald discovered, for example, that the abstract nature of concepts presented in physics

posed challenges for the instructor that are less apparent for those teaching in a more concrete discipline such as engineering.

Entwistle does not review the Carnegie Foundation research on teaching within the disciplines and the notion of “signature pedagogies” that stems from this work (Shulman, 2005). Carnegie researchers conducted in-depth analyses of teaching within five professional schools: medicine, law, engineering, teacher education, and the clergy. In this research, it was discovered that each professional school had distinctive teaching methods that were intended to socialize students into the profession and prepare them for practice within the profession. Thus, medicine has its rounds and law its cases with the practice of calling upon students by name to provide their analysis of them.

Educational developers are questioned regarding their knowledge of teaching within a discipline that might not be their own. Some knowledge of signature pedagogies and the ways knowledge is construed within the discipline can be helpful here, though wise educational developers never claim to be experts in teaching across all disciplines. Rather, they have expertise in being able to facilitate conversations within disciplines to get at the essentials of teaching within those particular contexts.

Threshold concepts represent another way of characterizing teaching and learning within specific disciplines. Entwistle reviews this notion, as forwarded by Meyer and Land (2003). Meyer and Land used in-depth interviews to identify concepts that take on particular significance in a given discipline. When students understand a threshold concept, other concepts become easier to learn. Students feel they have entered the discipline and their identities change accordingly. Such concepts can also be somewhat troublesome in that they challenge beliefs students may have held for some time. Interviews across a broad range of disciplines have shown that instructors can virtually always identify threshold concepts, and there is considerable agreement within a discipline regarding just what these concepts are. An example of a threshold concept identified by people who teach economics is opportunity costs, or the cost associated with passing up certain options when making a decision (Meyer & Land, 2003).

The remainder of Entwistle’s extensive chapter focuses on research assessing the effectiveness of specific pedagogies, such as problem-based learning and team-based approaches. In all, Noel Entwistle’s chapter presents a comprehensive overview of the key conclusions from research on student learning, with ample examples to develop a useful knowledge of research associated with each tenet.

In another chapter of *Taking Stock*, Keith Trigwell makes a distinction between research on student approaches to learning and research on the relationship between those approaches and teachers’ approaches. As we know from Entwistle’s chapter, there is considerable research on the effect of student approaches on learning outcomes. The relationship between student and teacher approaches is less researched.

The first step is to develop a way to understand teachers’ approaches to their work. For example, Pratt et al. (1998) have identified five teaching perspectives and has devised a widely used inventory (the Teaching Perspectives Inventory, or

TPI) to measure the extent to which a teacher adopts some combination of these perspectives (Pratt et al., 1998). These perspectives are transmission, in which the main goal is to deliver content; apprenticeship, in which teaching is seen as a process of modeling that which is to be learned; developmental, where the focus is on learning processes over time; nurturing, in which the goal is to support and engender personal agency; and social reform, in which the main goal of teaching is to create a better world.

Trigwell and Prosser (2004) have also categorized teacher approaches via a large number of interviews and, like Pratt, devised and tested an inventory (the Approaches to Teaching Inventory, or ATI). Unlike Pratt's teaching perspectives, Trigwell and Prosser's approaches to teaching are context-based and hierarchical. Higher-level approaches build upon the strategies of lower-level approaches.

The ATI is a carefully developed instrument with good psychometric properties (Trigwell & Prosser, 2004). It focuses on the two extremes of the five categories identified in Trigwell and Prosser's original interviews. The teacher-focused end is called an Information Transmission/Teacher-Focused (ITTF) approach. As the name implies, it emphasizes what the teacher is doing and the goal is the transmission of content. The student-focused end is called a Conceptual Change/Student-Focused (CCSF) approach. The emphasis here is on what the student is doing and how to create learning environments that get students to do the sorts of things that allow them to develop their own understanding of concepts.

The development of the ATI allowed Trigwell and colleagues to conduct research that correlated teaching approaches to learning approaches, such as deep versus surface, Haggis' criticisms of the constructs notwithstanding. Like the research by Kuh and others described earlier in this chapter, the research using the ATI is correlational in nature. It looks at relationships between ATI scores and scores on the Study Process Questionnaire, which measures deep and surface approaches. The consistent finding across a range of studies is that the Transmission/Teacher-Focused (ITTF) approach yields a surface approach to learning and the Conceptual Change/Student-Focused (CCSF) approach is associated with a deeper approach (Trigwell, Prosser, & Waterhouse, 1999; Trigwell, Prosser, Ramsden, & Martin, 1999). Moreover, Gibbs and Coffey (2004) found that educational development programs increased participants' propensity to adopt CCSF approaches, with concomitant changes to their students' approaches to learning.

This research is important because it links teaching approaches to learning approaches. In so doing, it helps answer questions about what constitutes good teaching. To this extent, Trigwell and colleagues' research is similar to that of Kuh and Vesper, Cruce et al., and other work spawned by Chickering and Gamson. All this research aims to identify good practice and relate it to either learning outcomes or students' approaches to learning. The difference is that Trigwell and colleagues set out to identify approaches and design a measure based on extensive interviews of teachers. Research on the seven principles, on the other hand, has tended to use what might be called "proxy" measures, with coincidental similarities to the principles.

Research-Based Foundations: Paul Ramsden's Learning to Teach in Higher Education

Trigwell's chapter on the relationship between approaches to teaching and learning grows from a strong tradition that considers the way teachers think about teaching to be crucial to teaching improvement. In this tradition, one of the strongest pieces of foundational scholarship has been provided by Paul Ramsden (1992, 2003) in his book *Learning to Teach in Higher Education*. Ramsden and Trigwell also draw significantly from other important work, including that of Kember (1997) and Biggs (1987), the latter focusing on students' approaches to learning.

According to Ramsden, teaching without a theoretical basis is like driving a car without a steering wheel. When Ramsden refers to theory in this context, he is talking about what psychologists might call "implicit theories"—or those that are generated by the individual (Sternberg, Conway, Ketron, & Bernstein, 1981) and not necessarily by related scientific communities. In our own work, we have explored with colleagues what we have called their "teaching heuristics"—those implicit theories and beliefs that inform their teaching. Similar to Ramsden, we have said that teaching without such heuristics is like running a computer without an operating system.

Ramsden forwards three theories of teaching that emerge from extensive research featuring interviews of those teaching in higher education. Like the approaches presented by Trigwell (2010), these theories are presented hierarchically, moving from the teacher-centered to learner-centered.

In Theory 1, teachers focus on what they need to do in order to transmit content. In Theory 2, the focus is on what the teacher must get students to do in order to learn the content. Theory 2 is more learner-focused, but it still places the emphasis on what the teacher is doing in terms of creating activities and learning environments. Those espousing Theories 1 or 2 can do all their planning in advance.

In contrast, Theory 3 focuses on what Ramsden calls making learning possible. People adopting this theoretical approach to their teaching work collaboratively with students to support and direct learning. While there is still planning involved (remember that Ramsden's model is hierarchical—Theory 3 encompasses the best of Theories 1 and 2), Theory 3 teachers are much more responsive to students' progress or lack thereof.

According to Ramsden (2003), teaching that is effectively responsive in this way follows six key principles. These are as follows:

1. Maintain students' interest and provide clear explanations;
2. Demonstrate concern and respect for student and student learning;
3. Provide appropriate assessment and feedback to students;
4. Provide clear goals and intellectual challenge for students;
5. Design learning environments that encourage students' sense of independence, control, and active engagement;
6. Learn from students.

An important underlying assumption of Ramsden's recommendations is that students construct knowledge. It cannot simply be transmitted to them. This assumption is also at the heart of Biggs' notion of constructive alignment—aligning learning environments, outcomes, and assessment strategies so that students can construct desired knowledge, skills, and attitudes (see Biggs, 2003). Indeed, Ramsden's presentation of theories of teaching assumes that teachers construct knowledge as well. He asserts that educational developers must be cognizant of these constructions, or implicit theories, in order to help people improve their teaching.

All these research-based foundations take differing paths to the same place. Trigwell, Ramsden, Bransford, and colleagues talk about the value of student-focused over teacher-focused approaches. Kuh and others talk about the importance of researching processes that are related to learning outcomes (i.e., what the student is doing). Barr and Tagg (1995) talk about moving from teaching to learning as a focal point for conceptualizing and planning in higher education. In this section, we have introduced three categories of scholarly foundations on which educational development is based. All our fundamental tenets, regardless of category, espouse this focus on learning and the student.

Bringing Scholarly Foundations into Practice: Challenges for Educational Developers

It is one thing to categorize the scholarly work conducted in the area of teaching and learning. It is another thing altogether to bring this scholarship into our practice as educational developers. Bringing educational scholarship into practice requires the psychological work of getting colleagues to consider this literature to be valid and important. This work is not helped by some of the language featured in the literature. David Green (2009) provides an excellent description of this language and faculty members' negative reactions to it. Words like "agentic" and phrases like ". . . non-functional ritualistic imitations of distantly perceived and uncomprehended models" (Green, 2009, p. 40) are not used widely across all disciplines, making it difficult to translate research into practice. Such language has been shown to alienate colleagues from the research that may support good practice.

In his *Taking Stock* chapter, Noel Entwistle makes the point that there is no single preferred practice in teaching. Rather, there is a potential "goodness of fit" between a given practice, a desired outcome, and a learner. Thus, we run into a significant challenge in educational development if we use a term found commonly across numerous disciplines—"best practice." The term "best practice" has a long history in health care. It is most often used to describe, not so much the best possible practice, but the best we have at the time. As such, the term should imply an iterative process. It is in this vein that we recommend the use of the term when discussing scholarly foundations of our work.

In this chapter, we have characterized the foundations of some of our dearly held tenets as being either apocryphal, theoretically plausible, or research-based. In so doing, we have acknowledged the potential value of everything from poetry to

factor analysis. In our practice as educational developers, however, the recognition of such value differs dramatically from one discipline or institution to the next.

We have worked with engineering departments where faculty members quickly and easily see the value in a matrix approach to curriculum design. Those same faculty members, however, need more time to understand how ethnographic analysis could be used to help them understand important differences among groups of students working on team-based projects (see Aman et al., 2007).

The debates and preferences for certain research methods and forms of evidence are, therefore, very relevant for the educational developer who serves all disciplines and research traditions. When a particular educational practice is introduced or espoused, academics ask, “How do you know this works?” This is a way of asking if we are espousing “best practice” or “evidence-based practice.” Thus, reference to supportive evidence can be problematic if that evidence does not fit within the research traditions of the inquirer’s discipline.

We also face the very real possibility that the research we introduce to colleagues is foreign to *most* of them. In fact, we will occasionally work with colleagues who are surprised that there is any research literature on the teaching and learning issue with which they are grappling.

Before we give up entirely, it should be noted that faculty members’ awareness of educational literature appears to be improving. For example, in our practice, we are unlikely now to hear what Maryellen Weimer heard from a workshop participant a few years ago when she directed the person to a particular book on university teaching: “You mean an *entire book* has been written about university teaching?” (Weimer, 2005). Now, organizations like The International Society for the Scholarship of Teaching and Learning attract over 600 participants to annual conferences. Many of these people are faculty members working in the disciplines. Awareness of research on teaching and learning is increasing.

Indeed, a source of considerable hope when we think about the translation of research into practice is the current movement known as the scholarship of teaching and learning (SoTL). In this movement, the people who we hope will apply good research to their teaching are actually doing some of the research. This area features its own set of challenges, some of which we have already discussed in this section. Nevertheless, SoTL responds to a point made by Green and Glasgow (2006) that “if we want more evidence-based practice, we need more practice-based evidence” (p. 126).

Concomitant with the development of societies and organizations, individual institutions are creating institutes and research groups, composed of faculty members from across a range of disciplines. A scan of educational development websites in Canada, for example, yields numerous examples (Poole, 2010).

This is not to say that there is a widespread, keen awareness of this literature. We still encounter debates about the reliability and validity of student evaluations of teaching, for example—debates that summarily ignore decades of research on this topic. One-way, transmission-based teaching still abounds (Knapper, 2010), with assessment strategies that ignore a large literature on what has been called “authentic assessment” (Wiggins, 1993).

These challenges are real, though we believe they are alleviated somewhat by a good understanding of the major categories into which our evidence falls. From there, we can seek out appropriate examples of such evidence and present it to colleagues in ways that, at the very least, make all concerned aware of the breadth of the gap between evidence and practice.

Where Does This Leave Us in Educational Development?

We have presented three categories for educational development's scholarly foundations in the hope that these will help us understand and talk about these foundations in our work. The categories remind us that "evidence" in our field takes on many different forms. That said, we should still be able to distinguish between strong and weak evidence.

In *Taking Stock*, Noel Entwistle provides a series of questions we can ask on a general level to help us evaluate both the theoretical underpinnings and the practical value of our scholarly foundations (remembering that over half of educational research does not make reference to theory [Tight, 2003]). These are as follows:

- Is the theory presented in language that is readily intelligible to teachers?
- Can the aspects identified as affecting learning be readily changed?
- Does the theory have direct implications for teaching and learning in Post-Secondary Education (PSE)?
- How realistic and practicable are the suggested implications?
- Will the theory spark off new ideas about teaching?

(Entwistle, 2010)

Many of us will have taken research methods courses in which we were taught how to critique concepts, methods, findings, and conclusions. This knowledge can be very helpful as we consider our scholarly foundations, though it is probably discipline-specific. As an example, our critique of the concept of multitasking is forwarded from the perspective of cognitive psychology, which is no surprise given the disciplinary background of one of this chapter's authors. For other kinds of critique, we must rely on colleagues familiar with other disciplinary traditions. No single educational developer can critically analyze the whole of educational research. Educational development work crosses disciplinary boundaries, not just in terms of the pedagogies we prefer, but also in the scholarly foundations on which our field is built. We need to invest more energy in providing for each other analyses and recommendations regarding the strength of evidence.

Understanding Organizational Culture in Order to Enact Organizational Change

To this point in the chapter, we have focused on scholarship intended to guide teaching and learning—the practices of colleagues and students. Now, we look at scholarship designed to inform our own practice as educational developers. To date,

education research has provided a useful foundation when we have needed to articulate the rationale for practices we espouse. Still, the question we need to continually pose ourselves is, “What else can we do to help enact change at the organizational level and what scholarship can help us with this endeavor?”

Theories of organizational change are many and tend to have their own assumptions about how and why change occurs. Cultural, social cognitive, evolutionary, and life-cycle theories are only but a few of those used to conceptualize, foster, and/or explain change (Kezar, 2001). Although expanding on these theories is beyond the scope of this chapter, we mention them here to point to the fact that there is an extensive and expansive literature that can help us grow our understanding of the role of educational development in the process of organizational change.

For, in our educational development work, we frequently strive to support change—individual and institutional (Fraser, Gosling, & Sorcinelli, 2010). Metaphors such as “crossing borders” (McAlpine & Harris, 1999) and “trading zones” (Mills & Taylor Huber, 2005) have been suggested as ways to conceive of our work with different communities of scholars and our approaches to that work. We have often described ourselves as “change agents” (Dawson, Mighty, & Britnell, 2010; Ouellett, 2007) who need to be “strategic” within the context of multiple academic cultures: institutional, departmental, and disciplinary, to name a few. In assuming this role, we can benefit then, not only from becoming discerning users of research into teaching and learning, but also from strengthening our understanding of organizations and organizational change in higher education. Both personal experience and reading pertinent literature can help us address this aspect of our work.

Kezar (2001) cautions, however, that change within higher education requires a “distinctive approach” (p. v): one that takes into account the unique features of HEI. Summarizing findings from the literature, Kezar writes that some of these unique features include the following:

- Faculty members are highly values-driven. Some values, such as the collegial ideal, academic freedom, and autonomy, are shared among faculty members, but other values—for example, the socialization of early career academics—may be particular to the discipline (Gappa et al., 2007).
- Faculty members tend to be influenced more by referent power than by legitimate power and rewards. Referent power is based on trust and shared values with individuals that academics identify as belonging to their scholarly community. Legitimate power, on the other hand, is power vested in people by virtue of their positions in the (hierarchical) academy (French & Raven, 1959). Because academics believe in and foster a shared sense of identity, they are more willing to be influenced by their colleagues than they are to be influenced by external rewards and/or administrative regulations.
- Administrative values and academic values differ. Unlike academic values that affirm the importance of collegiality, academic freedom and autonomy, and peer review, administrative power “values bureaucratic norms and structure, power and influence, rationality, and control and coordination of activities” (Kezar, 2001, p. 72).

Combined, the unique features of each HEI create an organizational culture and, although similarities exist among post-secondary institutions, there is widespread agreement that institutions differ from one another. Thus, not only do educational developers need to take into account the distinct features of HEI when we work toward organizational change, but we must also intentionally grow our understandings of our home institution's specific cultural entity. Building our understanding of organizational culture, and coming to know how cultural influences play out in departments, across the institution and more broadly, can help us address some of the challenges of initiating or supporting transformational change within higher education (Tierney, 1988).

Educational developers, administrators, and faculty members often have an intuitive understanding of how culture affects their decision making. Although this basic awareness is important, we would like to suggest that by embarking on a more formal understanding and/or investigation of organizational culture, we may better be able to contribute to transformational change within higher education. Transformational change is deep and pervasive change that affects the whole institution. It occurs over time as a result of intentional efforts; it alters the institutional culture (Eckel, Hill, Green, & Mallon, 1999). If transformational change related to teaching and learning is what educational developers aim to achieve, then how can the concept of organizational culture aid us?

Many approaches exist to the study of organizational culture. One of these is Schein's Theory of Organizational Culture (2004); it has been used in studies of higher education (e.g., Gallant, 2007; O'Meara, 2004). We present some information on this model, not to suggest that it is "best" for understanding organizational culture, but only to illustrate how educational developers might use such a framework to examine the cultures within which they work.

Under Schein's framework, culture is defined generally as

A pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (Schein, 2004, p. 17).

Culture, explains Schein, results from extensive group learning processes. It provides order and meaning to group members, simultaneously restricting them and offering stability. According to this definition, groups face two fundamental and interdependent challenges as they evolve: integrating individuals into a productive collective and adapting effectively to the external environment. As people within organizations create solutions to these problems, they develop, over time, systems of shared meanings. Culture is the name given to the resulting joint beliefs and assumptions. Thus, Schein's (2004) Theory of Organizational Culture serves to help understand complex interactions among faculty members and/or administrators in any given higher education institution.

Schein describes three levels at which culture manifests: (1) artifacts; (2) espoused beliefs and values; and (3) underlying assumptions. Artifacts include the visible structures and processes within an organization, such as the languages

used, the technologies employed, and the creations produced. They also include myths, stories, rituals, and customs within an organization. Espoused beliefs and values, according to Schein, reflect what the group members judge to be important. They give an indication of what individuals within an organization value and/or consider acceptable (Jutras, 2007) but may or may not actually guide behavior (Values Based Management, n.d.). Finally, basic assumptions include beliefs, perceptions, thoughts, and feelings that are so taken-for-granted that they are normally quite consistent within a social unit and typically treated as non-negotiable. Because these assumptions influence group members' behaviors, uncovering them is key to understanding the culture of that group. Since basic assumptions "tend to be nonconfrontable and nondebatable" (Schein, 2004, p. 31), they are apt to be very powerful. What renders them so powerful is that, unlike values—which are subject to discussion—basic assumptions generally remain unquestioned and unexamined, but mutually reinforced.

In order to illustrate how Schein's work can help us better understand—and therefore presumably more efficiently—advance organizational change, we can consider the peer evaluation of classroom teaching. Educational developers are frequently involved with helping departments establish and/or improve their peer review of teaching schemes; this work involves an attempt on our behalf at effecting organizational change and requires us to work closely with the concept of academic culture. In North America, the peer review of classroom teaching is often one way in which teaching is evaluated for the purpose of making tenure decisions (Gravestock & Greenleaf, 2008). The practice of peer review of teaching can be considered an artifact (i.e., a ritual or custom), according to Schein's levels. It is typically conducted by one or more senior departmental colleagues who, working as part of a tenure committee, conduct at least one observation of teaching in order to produce a report that is ultimately used to help determine whether the candidate under review has been successful in achieving tenure. In this example, the espoused belief is that a peer who is (1) of senior academic rank and (2) a member of the candidate's department is the most suitable individual to evaluate teaching. This practice, therefore, aligns very closely with the value of collegiality, which is highly cherished in academia (Gappa et al., 2007).

Practices such as having senior (i.e., tenured) departmental colleagues conduct high-stakes evaluations of their colleague's teaching are based on assumptions that might be revealed when an educational developer is invited to help a department modify its peer review of teaching schemes. For example, let us assume this said educational developer proposes, based on his/her findings about peer review best practices in the literature, that peer reviews of teaching be conducted by individuals within their department who are strong teachers (as determined by their student evaluations of teaching and/or their demonstrated interest in developing their teaching practice), irrespective of their title and rank. That is, the educational developer proposes that peer reviews could be conducted by contingent faculty members, part-time faculty members, or tenure track faculty members of a more junior rank. In some departments, this suggestion might be fiercely rejected because it violates a basic assumption held by most members: only tenured departmental

faculty members of a senior rank are “qualified” to evaluate their junior colleagues’ teaching. If that were the case, enacting a change in the peer-review process (i.e., enacting transformational organizational change) whereby peer reviews were conducted by faculty members of varying ranks would be very challenging. The educational developer who can uncover relevant departmental beliefs, values, and assumptions could, presumably, more aptly work with departmental faculty members to change their peer-review scheme. This example illustrates that a knowledge of departmental culture, using an approach such as that provided by Schein, can help faculty developers know how and when to advocate for change. The same theory, or other theories of organizational change, can also be used to better understand and/or foster change institutionally or beyond the university (for a more elaborate example of using a change model to enact institutional change, see Dawson et al., 2010).

To illustrate the use of organizational change theory at the institutional level, let us consider university-wide committee work pertaining to decisions that have implications for tenure and promotion. One such committee may be charged with the responsibility of developing policy regarding the content of teaching dossiers. An educational developer placed on such a committee may want dossiers to include evidence of reflective practice. Advocating for this assumes that the formative processes of reflection can overlap constructively with the summative processes associated with tenure and promotion decisions. In terms of Schein’s view of institutional culture, before the educational developer makes such recommendations to the committee about the value of reflective practice, he/she must have some understanding of the institution’s beliefs regarding formative and summative processes. Specifically, s/he must understand whether the institutional culture sees these as being entirely separate processes. If so, then the inclusion of a section in the dossier on reflection becomes problematic for administrators working within this culture. They might see the reflection section of a dossier as “rationalizing” or “excuse making,” or at least impossible to assess. They might also think that improvement is a positive thing, but it is where a person stands now that is important for tenure and promotion. On the other hand, if the institution sees overlap between formative and summative processes, then administrators may be open to the possibility that formative processes, such as reflection, can be evaluated for summative purposes. The above two examples point out that models of organizational change may be useful for guiding change and/or understanding culture at multiple levels.

Research into the Impact of Educational Development: Trends and Findings

Even if we learn how to engender change, how can we know that it has been change *for the better*? In fact, the lack of systematic evaluation of educational development programs is an ongoing concern (Gibbs & Coffey, 2004; Ho, Watkins & Kelly, 2001;

Kreber & Brook, 2001; Stes, Coertjens, & Van Petegem, 2010; Weimer & Lenze, 1997). The purpose of this section is to provide a brief overview of findings into the impact of educational development and describe some trends in studies conducted to date. We will also present some of the conclusions that have been drawn about the effectiveness of educational development and suggest ways in which the study of impact may be expanded in the future. In doing the aforementioned, we aim to provide our readers with a sense of research frameworks that may be employed to approach the evaluation of our work.

Where to Look When Measuring Impact

The potential effects of an educational development intervention are extremely difficult to quantify. This is because there are multiple variables—many of them not addressed by a given initiative—that play into whether or not a participant changes his or her beliefs, behaviors, and attitudes with respect to teaching. Furthermore, many programs emphasize skills, values, and outcomes that may unfold slowly over time and can vary depending upon the individual. In addition, as Weimer and Lenze (1997) point out: “. . .the interventions, in and of themselves, do not improve instruction. They are the methods used to motivate and inform instructional change, but the faculty member alone implements the alterations” (p. 205).

To date, most of the published literature that investigates the effectiveness of educational development consists of case study accounts undertaken by educational developers on their own professional practice. The element of practice most commonly examined is an organized activity, such as a short workshop, a yearlong workshop, a peer evaluation, or consultations, intended to positively affect the participants’ instruction and, ultimately, student learning. Researchers who attempt to evaluate the effect of the activity on instruction commonly attempt to analyze the participants’ self-reported changes via questionnaires with open-ended questions and qualitative interviews. Most evaluation attempts to measure participants’ satisfaction with, and perceptions of, a program and change in participants’ knowledge, attitudes, and beliefs about teaching and learning. Attempts have also been made to measure changes in participants’ teaching performance. Determining the relationship between educational developers’ interventions and student learning has proven much more challenging, as has assessing the effect of our work on institutional culture (Gibbs & Coffey, 2004; Prebble et al., 2004).

Calls for more research into the impact of educational development abound. Traditionally, research in this area has presumed there is a direct cause-and-effect relationship between specific teaching interventions and learning outcomes. The researcher who carries out an evaluation study typically identifies desired learning outcomes for the educational development participants, selects quantitative and/or qualitative measures by which to determine to what extent those outcomes have been achieved, and writes a report presenting the data and its analysis (Sword, 2008). Empirical studies of this type promote the notion that benefits of education can and should be measurable within a predetermined time period (Sword, 2008). They are

driven by a belief that stages of change are detectable and identifiable and by a desire to claim that an end point is attained through educational development. Our work, however, is likely to be only one of many factors that contribute to instructor growth.

In current calls for more research into impact, the limits of causal models have been acknowledged; scholars in the field have pointed to the need for greater sophistication in empirical design and have asserted the advantages of using multiple forms of inquiry over different time spans. Furthermore, it has been emphasized that studies of impact must move beyond assessing at the level of the individual participant and should engage with evidence from a variety of sources such as the institution, the department, the experience of the students taught by the participants, and other stakeholders (see, for example, Kreber & Brook, 2001, for a model of evaluating impact). Finally, it has been suggested that educational development research can be strengthened when it connects to explicit theoretical bases (Brew, 2006; Rowland, 2003; Weimer & Lenze, 1997). Adult learning theories, theories of organization change, and theories that derive from social psychology, to name a few, can provide theoretical foundations for research into the impact educational development.

Reviews of the Literature on Studies of Impact: Approaches and Conclusions

In this section, we introduce three reviews of the literature on the impact of educational development and outline the strategy their authors adopted to reach their conclusions. In addition to reporting on some of the findings, we wish to draw attention to the common methodologies and challenges highlighted by these reviews and as it concerns evaluation of our work. Examining the scholarly foundations of measuring impact can help us determine what we confidently can assert regarding impact and what research still needs to be conducted.

The most frequently cited reviews of the literature on impact of educational development are by Levinson-Rose and Menges (1981) and by Weimer and Lenze (1997); both these publications primarily addressed educational development efforts in American institutions. More recently, Prebble et al. (2004) conducted an extensive review of more than 150 published studies dating from the early 1990s to the early 2000s from Australia, New Zealand, North America, the UK, Singapore, and Hong Kong. The intention of this latter review was to determine the effects of educational development on student outcomes, but since few studies examined this relationship directly, the authors instead focused on the relationships between educational development and effective teaching. Levinson-Rose and Menges (1981), Weimer and Lenze (1997), and Prebble et al. (2004) shared a common strategy to review the literature on the impact of educational development which may, in part, help understand the consistency in their results.

In the three studies, the authors categorized the educational development intervention investigated as belonging to at least one of the following categories:

- Workshops, seminars, and programs
- Consultations, peer assessment, and mentoring
- Grants for instructional improvement projects
- Student evaluations of teaching
- In situ training (working within a department)

The authors used these categories as a way of organizing their claims about the overall impact a type of educational development intervention could have. Next, for every study, Levinson-Rose and Menges (1981), Prebble et al. (2004), and Weimer and Lenze (1997) considered at which level impact was being assessed (see Table 8.2 on page XX). Each review used the same levels of assessment to analyze research findings:

1. Participants’ perceptions and satisfaction with a program;
2. Change in participants’ knowledge, attitudes, and beliefs about teaching and learning;
3. Participants’ teaching performance;
4. Students’ perceptions of instructor’s teaching performance;
5. Students’ learning.

The first two levels examine the impact of the intervention on the participant. At the third level, there is a shift from an internal focus on the participant’s affective or cognitive responses to observable changes in teaching actions. The final two

Table 8.2 Levels of assessment used in three reviews of the literature

Levels of assessment	Sample manner by which data may be gathered
Teacher attitude through self-report	The participants provide their opinion as to the effectiveness of the program via verbal or written feedback forms
Teacher knowledge from tests or observation	Pre- and post-tests measure the growth in teacher’s knowledge about the matters covered in the training program
Teacher skill from observation	Direct observation detects growth in knowledge Direct observation of a teacher demonstrating new skills and knowledge in the teaching context
Students’ perception of teaching through self-report	Students provide feedback on their teachers’ teaching performance (i.e., by way of a standard assessment process or via a more intensive and less structured interview process)
Student learning from tests or observer reports	Analysis of student test results Direct observation of student learning

Note: Wording for the levels of assessment originates from the review by Levinson-Rose and Menges (1981); the word “teacher” is taken to mean the participant in the education development intervention.

levels consider how teaching may influence students and their learning (McAlpine, 2003).

According to the review authors, these categories are indicative of a hierarchy of evidential strength where the strongest evidence for the effectiveness of educational development is its impact on student outcomes. The students' assessment of their instructors' effectiveness comprises the second strongest evidence. When observers, including students, witness an instructor actually applying new skills and understandings in classroom teaching, this provides stronger measures of impact as compared to teachers' acquisition of knowledge from their training programs. The weakest indicator, yet the most common form of evaluation adopted by the educational developers, is feedback provided by participants about the value of their training (Levinson-Rose & Menges, 1981; Prebble et al., 2004; Weimer & Lenze, 1997). Thus, when studies reported a positive and detectable impact from an educational development intervention, more importance was given to studies that used student-based measures of effectiveness, or observation of teaching practice, as compared to those that relied on measures of participant perception, knowledge, or behavior (Prebble et al., 2004).

Finally, each of the reviews drew conclusions about the impact of educational development; their conclusions were similar for categories of interventions that overlapped.

In Levinson-Rose and Menges' review (1981), the authors determined that seminars and workshops, ranging from half-day to weeklong or longer, were the most frequently offered, and least evaluated, type of educational development activity. In the authors' opinion, workshops and seminars are useful to raise awareness and motivate participants, but are the least likely to "produce lasting changes in teaching behaviour or lasting impact on students. . ." (Levinson-Rose & Menges, 1981, p. 419). Weimer and Lenze (1997) and Prebble et al. (2004) reached largely the same conclusion about the limited impact of short courses, workshops, and seminars on changing teaching behavior. About evaluations that assess at the level of participant attitude, Weimer and Lenze (1997) affirmed: "It does not prove that the programs caused them to change any of their instructional behaviors, nor does it establish any relationship between program participation and significantly improved learning outcomes" (p. 214). Another common observation from the reviews was that improvements in teaching are much more likely to occur when results from student evaluations of teaching are discussed in consultation with an educational developer, in contrast to when instructors simply review the results themselves (Levinson-Rose & Menges, 1981; Prebble et al., 2004; Weimer & Lenze, 1997). Finally, all authors concluded that educational development interventions with the most lasting impacts were those in which participants continued to practice and receive feedback on their efforts over time (Levinson-Rose & Menges, 1981; Prebble et al., 2004; Weimer & Lenze, 1997). Prebble et al. (2004) found that teachers' conceptions about teaching and learning were the most important influence on how teachers teach and maintained that intensive educational development programs—those that typically extend across a semester or more of part-time study and take place apart from the daily work of the unit—can be effective in transforming these beliefs.

Though some studies have shown promising results with respect to the impact of educational development, overall, there is little evidence that our work is having an effect on teaching practice and on improving student learning in higher education (Gibbs & Coffey, 2004; Macdonald, 2003). As Christopher Knapper (2003), one of the founders of educational development in Canada, succinctly reports: “In terms of effects on higher education practice, . . . we would earn at best an A for effort, but probably a C for impact” (p. 7).

As educational developers, we must continuously engage in the scholarship of our own practice (Brew, 2010; Hoessler, Britnell & Stockley, 2010) and rigorously study the impact of our work, especially at the more distal levels of the framework presented in Table 8.2. Doing so helps us better understand how, if at all, we are meeting our primary mission—that of enhancing teaching and learning in higher education. Scholarship into our practice not only provides insight into how we are doing but also helps establish educational development as a legitimate area of study in higher education. In addition, when we are able to prove that what we do has value, it earns us recognition and we more soundly justify our existence both among administrators and a public that is paying for and expecting growing attention to student learning experiences.

Conclusion

The three main areas of educational development work presented in this chapter are causally linked. The effectiveness of our work is enhanced by a knowledge of the scholarly foundations upon which beliefs about good teaching practice are built. Sound evaluations of the impact of our work, informed by theory on program evaluation, will demonstrate this enhanced effectiveness of our programs. Through this facilitation of good teaching practice and rigorous demonstration of its impact on teaching practice and student learning, we position ourselves more strongly to be agents of constructive organizational change.

All of this work is built on a foundation of scholarship. The better we understand this scholarship, the better our work will be in educational development.

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