

PEDAGOGY AS CONVERSATION: A METAPHOR FOR LEARNING TOGETHER

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The term ‘pedagogy as conversation’ is introduced as a possible metaphor to guide our work with students in mathematics classrooms. Different conceptions of pedagogy and modes of conversation and listening are explored from a number of theoretical perspectives and then illustrated in a snapshot of classroom practice to describe the nature of conversations and the opportunities they can create for enhancing learning. The construct of ‘pedagogy as conversation’ also takes in the emotional and relational aspects of learning in classrooms that are sometimes overlooked in theory, but are always present in practice.

Setting the scene

When I began my career as a primary school teacher, I was relatively unaware of the complexities and uncertainties that were woven into the fabric of teaching. I held an implicit understanding that teaching could be *worked out* and after a few years teaching I would get it right. However, the threads of thirteen years experience in classrooms from Kindergarten (Prep) to Year 10 continued to weave a sense of struggle and uncertainty that seemed to be an inherent part of teaching. Every year I would begin with the idea that this would be the year that I would surely get it right. Just when I thought I had things worked out, another variable would appear. A new syllabus, a

challenging student (perhaps three or four), a change in school structure or even a change in personal circumstance are all variables in our lives as teachers that seem to add the term *challenge* to our daily vocabulary. Two years as a mathematics consultant working with teachers in diverse school settings only seemed to add a sense of conviction to the uncertainties of teaching, particularly in mathematics classrooms.

My four years as a teacher educator in a university setting have compelled me to reflect more deeply about learning to teach mathematics and how to design learning opportunities that would engage students in mathematics classrooms. Paradoxically, it seems that as my experiences as a learner and teacher broaden, I have become more accepting of complexity and uncertainty and have come to the realisation that they are inevitable aspects of any pedagogical relationship. In fact, I would like to suggest that they are essential and productive aspects of life in classrooms that take into account the unpredictable nature of learning. If we were to think of our relationships with learners as conversational, it would require us to embrace complexity and uncertainty because conversation is all about opening up dialogue by asking rather than telling so that the destination of learning is determined and supported by the talk that emerges in classrooms.

This paper describes some of the findings that have emerged from the process of researching my own practice (Mason, 1998). I draw on a snapshot of a classroom lesson to illustrate what I have described as the construct of *pedagogy as conversation* that emerged from my reflective accounts of practice. As a result of researching my own practice and observing the practices of pre-service and in-service teachers over a period of six years I have noticed that the essence of many effective pedagogical practices can be characterised as relational and often conversational. In other words, I am suggesting that relationships, or ways of being in classrooms with learners is the bottom line of education, and in particular, I elaborate on modes of conversation and listening that can provide opportunities for learning in ways that are more relational and personally meaningful. What I believe characterises such relationships is a paradigm shift away from *covering* the curriculum towards an *uncovering* of the curriculum by creating conversations that open the door wider for learners to be involved more deeply in their own learning. This implies that the role of teachers is to listen more and tell less so that they get to know who the learners in their classroom are as people. By continuing

to write and share my thoughts about these shifts in thinking, I set them up for critique in the hope that they will extend our professional conversations about enhancing learning. Needless to say, my goal outlined earlier to become an effective teacher and learner is still a work in progress!

What is pedagogy anyway?

The word pedagogy has a long history in education and is understood in diverse ways, depending on the cultural context in which it is used. As a classroom teacher, I used to think that pedagogy was one of those *cringeworthy* words that was difficult to pronounce and even more difficult to get a sense of its meaning. I now see pedagogy as a useful and inclusive term that has the potential to name and integrate appropriate ways of being with students in classrooms. In recent times, the term pedagogy has been referred to as “appropriate ways of teaching and giving assistance to children and young people” (van Manen, 1999, p. 14), “the art and science of teaching” (NSW Department of Education and Training, 2003), or simply as “classroom practice” (Lingard, Mills & Hayes, 2000). I would like to suggest that pedagogy, as I describe it in this paper, can be a very constructive way of framing the synergistic relationship between teaching, learning *and* assessment practices in classrooms. Assessment is often left out of the term pedagogy and included as an afterthought to support pedagogical practices, but I believe it plays an integral role within our pedagogical practice and should become an inclusive component when we talk about pedagogy.

While van Manen (1999) provides an interesting history of the language of pedagogy, he also presents an imperative that pedagogy should not lose its original concerns that were “guided by an interest in the child’s experience and in the relational sphere between teachers and their students” (van Manen, 1999, p. 17). In short, “the practice of pedagogy may be defined as constantly distinguishing more appropriate from less appropriate ways of being and interacting with young people” (van Manen, 1999, p. 19). The emphasis on *distinguishing* in van Manen’s quote illuminates the importance of our identity and dispositions as teachers. The ability to distinguish or discern what are appropriate ways of being and interacting with young people requires teachers to be “personally present” for their students (van Manen, 2002). The relational, emotional, moral and personal dimensions of the

teaching/learning process are an integral part of the notion of pedagogy. van Manen (2002) calls these the *pathic dimensions of pedagogy*, and suggests that the act of teaching depends on the teacher's personal presence, perceptiveness, thoughtfulness and tact for knowing what to say and do in classroom situations. Such personal and professional attributes have also been identified as essential characteristics of highly accomplished teachers of mathematics (Bishop, Clarke & Ocean, 2002).

Clearly, pedagogy is concerned with developing appropriate relationships with students that take into account many relational aspects that play a crucial role in our interactions with students as they learn mathematics. The complex relationships that make up the intricate web of classroom life are reflected in the statement that "the term pedagogy recognises that how one teaches is inseparable from what one teaches, from what and how one assesses and from how one learns" (NSW Department of Education and Training, 2003, p. 4). As teachers, the term pedagogy has the potential to capture the nature of our daily practices that we undertake with the learners in our care, including the ways we plan for and implement assessment.

Putting assessment into the pedagogical picture

In my view, there are three educative threads that weave their way through daily life in classrooms. As educators, the decisions we make about the three educative processes of teaching, learning and assessing influence our pedagogical relationships. If teaching occurs only to the extent that learning occurs, then our assessment practices can mediate between teaching and learning to inform and guide our future pedagogical practices. From this perspective, assessment is seen as an integral part of instruction and a window into the effectiveness of our teaching practice. Elsewhere, I have argued in greater depth (Smith & Lowrie, 2002; Smith, 2002) for the inclusion of assessment practices in any discourse about pedagogy. Lingard et al., (2000), in their report on productive pedagogies in Queensland schools, referred to the need for 'professional conversations about how assessment can complement productive pedagogies, not work against them' (p. 109). I would go one step further and argue that assessment needs to be a connected and explicit part of any pedagogical discourse that describes appropriate ways of being in classrooms with students. Clarke (1997) reminds us that as educators we reflect what we believe is most important by what and how we choose to assess learning. Another

way of thinking about Clarke's notion is to see assessment as an opportunity to strengthen learning relationships and reflect on our teaching relationships. Similarly, if we consider the Latin word for assessment, *assidere* (to sit beside), then assessment can be thought of as a participatory event *shared with* learners throughout the learning process, rather than something that is *done to* learners during separate events (Smith & Lowrie, 2002).

Putting relationships into the pedagogical picture

At the same time, as van Manen (1999, 2002) reminds us, there is a fourth, connective thread that weaves the other three together. The relational dimensions of pedagogy resonate in our actions and our relations with young people. They refer to “the general mood, sensibility and felt sense of being” (van Manen, 2002, p. 220) that we create as teachers in classrooms. Our habits, intentions, routines, gestures, and moods, in other words our dispositions and emotions all affect our ways of being with students in classrooms. It seems clear that our relationships, our *ways of being* reflect who we are as teachers and can have a profound effect on our pedagogical practice. Mason (1998) suggests that the development of a *mathematical pedagogic being* is a critical aspect of being a teacher of mathematics. He suggests that “how teachers deal with mathematical questions, how they reveal their enthusiasms and interests, how they conduct themselves, can have a major influence on their pupils” (p. 375). Mason (1998) advocates teaching strategies such as thinking aloud in front of students, personally experiencing the learning of mathematics so that our sensitivities as learners are enhanced, and working collaboratively to describe and critique important classroom incidents so that alternative pedagogic practices can be invoked. Considering our *ways of being* in mathematics classrooms also invites us to consider the emotions of teaching and learning mathematics.

Hargreaves (2000, 2001) continues to develop and support professional conversations about the relational side of teaching and learning by recognizing that teaching is an emotional practice. He suggests that emotions are at the heart of teaching and exist *between* people in their relationships rather than just within the individual. From a mathematical perspective, there are a number of studies that are beginning to recognise the inseparability of thinking and emotion in mathematical activity (Evans, 2000), and in particular how the emotions that mathematics evoke can have

an affect on learning to teach, and teaching mathematics (Grootenboer, 2003; Hobden, 2001; Klein, 2001). It is worth quoting at length the conclusion made by Hargreaves (2000) as a result of his extensive studies working with elementary and secondary teachers:

Teaching is an emotional practice. Interacting with numerous children and adults each working day, teachers use their emotions all the time. This use of emotion can be helpful or harmful, raising classroom standards or lowering them; building collegiality and parent partnerships or putting adults at a distance. The capacity to use emotions well is grounded not just in individual competence or emotional intelligence. Emotions are located not just in the individual mind; they are embedded and expressed in human interactions and relationships (p. 824).

Surely if, as Hargreaves suggests, emotions are embedded in our relationships and interactions with students, then reciprocally, students' emotions about learning mathematics become equally important. In outlining a response to the question "what is pedagogy anyway", I have tried to open up the term to make it more relational and inclusive of multiple and appropriate *ways of being* in classrooms with students. The construct of *pedagogy as conversation* is now introduced and explored from the point of view of practice.

Pedagogy as conversation

Using the metaphor of conversation to describe the essence of teaching, learning, assessing and the ways of being in classrooms with learners brings with it a number of underlying themes. Conversation suggests dialogue, a reciprocal relationship based on language that requires an opening up to other people's opinions and positions to show that they care enough to listen (Noddings, 1992). In a sense, participating in a conversation means learning to let go of preconceived ideas and finished products because conversation is very much a process for making meaning. A useful distinction between conversation and discussion is posited by Davis (1996) when he suggests that a conversation is a "reciprocal engagement in a topic of mutual concern" (p. 27). Being in a conversation is a fluid and meandering journey where all participants are oriented toward a deeper understanding of the issue at hand. A conversation suggests talk among friends where understanding emerges as a joint

construction, a shared understanding that may arrive at unanticipated destinations. On the other hand, a discussion tends to put forward reasons for and against an idea and suggests a dichotomous stance where each individual posits their own views and may not necessarily be aimed at a shared understanding. Consequently, the term *conversation* suggests an educative relationship, or way of being with learners that implies negotiation and consensus, reciprocity, opportunities for the creation and connection of knowledge, and above all attentive listening. Espousing a conversational approach is an attempt to highlight the vital role that language and interaction play in conceptualising the pedagogy of mathematics.

Modes of conversation

Classroom conversations can be created in oral and written form (Smith & Lowrie, 2002). *Written conversations* can take the form of reflective writing such as journals or learning logs, work samples, or self-assessment tasks. The more conversational the written work is, the more a teacher can get to *listen in* to students' thinking and ways of knowing to gain more equitable ways of assessing learning. Writing feedback for students provides an opportunity for teachers to continue written conversations. It is argued that this reciprocal engagement allows for teachers and students to be co-learners and co-assessors of learning in classrooms.

Oral conversations can be thought of as *outer conversations* where private thoughts are made public so that they can be shared and critiqued. *Outer conversations* are interpersonal and rely on an exchange of dialogue in social situations. On the other hand, the notion of *inner conversations* recognises the value of internalised and personal conversations that learners can have from within. *Inner conversations* parallel Vygotsky's (1962) notion of private speech that is intrapersonal in nature and can provide a source of talking sense to oneself through internalised speech that can then be brought forth through outer conversations. All three modes of conversation strongly emphasise the important role that language plays within the processes of learning mathematics.

Modes of listening

One corollary of conversation is the imperative to listen. Davis (1996, pp. 52–3) elaborates further in his research into mathematics teaching in secondary

schools to distinguish between three modes of listening that occur in classrooms. *Evaluative listening* refers to an uncritical and detached *taking in* of information given by students that is judged right or wrong by teachers. *Evaluative listening* places the responsibility for listening on the student not the teacher so that the teacher rarely deviates from their original lesson plan as a result of this type of listening. *Interpretive listening* involves an attempt to get at what learners are thinking in order to *access* their sense-making processes rather than merely *assess* what has been learned. Both evaluative and interpretive listening are modes of attending that separate the role of the teacher and the role of the student.

Alternatively, Davis (1996) describes a more negotiatory, inclusive and messy mode of listening that he refers to as *hermeneutic listening*. The messiness of *hermeneutic listening* comes from an opening up of classroom structures, an acceptance of uncertainty so that the boundaries between teacher and learner are blurred and all voices are being heard and conversing towards a collective understanding of a given topic. It is this mode of listening that I see as embedded in the construct of *pedagogy as conversation*. However, like the word pedagogy, the word hermeneutic could be considered a little *cringeworthy* so I have chosen to call this type of listening *attentive listening*. Using the term *attentive* to describe the type of listening that I see as vital for the development of effective conversations suggests a caring, receptive and empathic form of listening where we are players in what Elbow (1996) calls the believing game. If we play the believing game as teachers, we are listening attentively to others, affirming and restating their ideas and trying to experience more fully what others have to say. We have an expectation (a belief) that what students have to say has the potential to enhance their understanding as learners, and your understanding of where they are as learners.

Substantive conversations

Other support for the conversational metaphor can be found in departmental documents that have focused on productive pedagogies (Education Queensland, 2001) and quality teaching (NSW Department of Education & Training, 2003). Both these documents highlight the importance of *substantive conversations* that call for reciprocal interactions that require teachers to listen attentively to the responses of their students. Substantive

conversations describe a sustained engagement in conversations that have: intellectual substance; dialogue that is not completely scripted or controlled but builds on ideas to form a collective understanding; and engagement in conversation that goes beyond an initiate/response/evaluate routine towards a more connected exchange between speakers (Education Queensland, 2003, pp. 203–4). To sustain conversations, a focus on *metalinguage* is also called for. This aspect of pedagogy refers to “explicit talk about talk and writing” and how language works for a particular topic or subject area (Education Queensland, 2001, p. 218). While these pedagogic guidelines have been put forward, there has been little evidence of what this might look like in practice. I present a classroom snapshot of practice that attempts to illustrate the nature of *pedagogy as conversation* by explicating many of the terms that I have used in the previous sections of this paper. The snapshot attempts to highlight the nexus between the interdependent processes of teaching, learning *and* assessing and how each educative process provides an opportunity for creating conversations in classrooms. Embedded throughout the anecdote are relational and emotional aspects of teaching that frame our *ways of being* with students.

Pedagogy as conversation in practice

Creating a conversation in Year Four

Imagine a classroom setting where Year 4 students are learning about *chance*. The class consists of students who have been streamed for mathematics and are viewed to be in the *top* group. I had been asked by a classroom teacher to demonstrate an open-ended approach to a lesson as part of a nationally funded professional learning project that we were working on. My reflections about the experience were enhanced by my conversations with the classroom teacher and a pre-service teacher who both observed the lesson and helped me to critically reflect on my practice. As with any class I teach, I chose to find out about the students’ prior knowledge and experiences before we moved too far into the lesson, so I planned to have a conversation with the students about the language of *chance*. Drawing on the characteristics of conversation outlined earlier, thinking of this aspect of pedagogy as a conversation suggests that I wanted to listen in to students’ dialogue that would allow me and the students in the class to come up with a shared understanding of the word *chance*. By establishing

the prior knowledge of the students and using my own understanding of *chance*, I tried to display a willingness to listen attentively (hermeneutically) and orchestrate a collective agreement about the topic. In a sense I was playing the believing game.

To develop the conversation, I asked for other words that might describe the word *chance* and received words like likelihood, sometimes, always, never, maybe and then the word probability was introduced by Ben. It was clear that this term was part of Ben's prior knowledge, but seeking an elaboration of the term seemed to enhance the conversation about *chance* as other students listened in to Ben's contribution. I then asked each student to write down a sentence that began with "When I think of *chance*, I think..." I have found that using sentence starters as a teaching strategy provides a scaffold for students and builds confidence in their writing skills, especially given that we are doing mathematics! The sentence starters also create a space for developing *inner conversations* (private speech) as a sense making process *before* they are asked to share their thoughts through *outer conversations*. This strategy provides think time for students and sends a silent message that mathematics does not always require instant answers.

After some think time, I then sought volunteers to share their responses with the rest of the class. Key words were put on the chalkboard and from these we all worked together to come up with a collective definition of *chance*. *Attentive listening* skills enhanced the ability to facilitate conversation towards a consensus that led to the definition "*Chance* is the likelihood that something will occur" (Year 4 class, 2002). This definition was written on the board as a collective understanding of the new topic. The process of sharing the language of *chance* allowed for the foregrounding of both the common vocabulary and the more technical terms of *chance* such as *probability*. This foregrounding of language illustrates one of the aspects of productive pedagogies known as metalanguage that enhances the development of intellectual quality in classrooms (Education Queensland, 2001; Lingard et al., 2000; NSW Department of Education & Training, 2003).

Learning to let go

My teaching role in this scenario was heavy with the responsibility of keeping the definition of *chance* intellectually honest. While the integrity of the mathematical content was not negotiable, I wanted to make room for

students to feel a sense of ownership of their learning. Reciprocally, the teaching strategies that I have described not only created a space for constructing understanding (learning), but were also strategies for assessing students and assessing my teaching practice. The type of assessment that sits comfortably with this notion is referred to by Bright & Joyner (1998) as *classroom assessment*, which is concerned with assessment whose main purpose is to inform instruction and to communicate to students and others what students know, understand, and can do in mathematics. This idea seems to parallel what Clarke (1997) describes as *constructive assessment*. A major goal of classroom or constructive assessment is to understand learning from each student's point of view on a day-to-day basis so that teachers can improve instruction in the short term (in the moment or in the next lesson) and the longer term (future planning of the next unit).

What is notable about this anecdote is the need to let go of a preconceived definition for the topic and open it up to the students to come up with their own definition. It also provided an opportunity for the students to take ownership of the definition and to continue the open and conversational quality of the lesson. To contribute further towards this, I gave ten students a card each and asked them to place themselves out the front of the classroom in order of chance from never on the left to always on the right. The cards read: never, one in a million, unlikely, sometimes, maybe, fifty-fifty, usually, often, likely, and always. The rest of the class became the judges to decide if they agreed (or not) with how the students positioned themselves. The class judges had quite diverse opinions about where the words should be placed. These opinions clearly reflected students' prior experiences with the language. Responses such as "when my Mum says maybe, she really means never" and "one in a million means it will happen at least once and unlikely means it probably won't" caused some conflict among the students regarding the placement of words. The talk about positioning seemed to empower quite a number of students to join in the conversation and clearly involved emotive aspects of learning that elicited a sense of purpose and ownership of ideas. Moreover, this aspect of the lesson seemed to illustrate the notion of substantive conversation that includes features of talk about subject matter, dialogue, coherent extension of ideas and a sustained exchange of ideas that goes beyond routine patterns of interaction (Education Queensland, 2001, pp. 203–4). Learning to let go of the topic by opening up the conversation about *chance*

provided opportunities for the students to author and own their own learning.

After our continued exchange of ideas, the words were placed on the board in order and the students were asked to represent the findings in their workbooks taking into consideration the space limitations and the length of the combination of words. I also asked students to come up with a title that we could put in our books that would reflect the work we had done in the lesson. Our title became *The line of chance* (Oliver, Year 4 student, 2002), which, like the definition we had come up with earlier was written that way in their books to acknowledge the original source of our understanding (just like we do at university!). The Year 4 students represented their *lines of chance* in diverse ways ranging from diagonals to borders to curly creations on the page. They also made the changes in the order of the words they had talked about earlier if they felt strongly about them and could justify their decisions.

Sustaining conversations

To continue the conversation further, the students were asked to individually put the words *always* and *never* in a sentence and record these in their books. This strategy provided an opportunity for students to construct their own understanding of *chance* words (as they created *inner conversations* with the self) so that they could be shared initially through *written conversation* and then through *outer conversations* in the classroom with others. As the students continued to work independently, the classroom teacher and I were able to walk around to each table and continue the conversations by asking questions about the students' choices for representing their findings. We were able to continue the conversations about *chance* more individually as we read the students' sentences. One of the students' responses provides a timely reminder about the emotions of teaching and the space for students to share their emotions that a conversation can create. Her sentences read: "I will ALWAYS love my Dad" and "I will NEVER give up hope that he will come back and live with us one day". While these were not the mathematically focused responses that the classroom teacher and I had anticipated, it presented us with a moral obligation to choose, in the moment, an appropriate and caring response to this student's written conversation. My interpretation of the student's writing is that she was looking for an opportunity to

converse with her teacher (and/or me) and it was our moral responsibility to listen attentively and carry on the conversation at an appropriate time and place. This anecdote reminds us that being able to *read the play*, to take into account our emotions and the emotional needs of students, and make careful choices about appropriate actions are all vital aspects of developing our pedagogical practice.

To end the lesson, I modelled a think-aloud strategy for reflecting on our learning. My words to the students were “As I was participating in this lesson, I learnt that you knew a lot more about the topic of *chance* than I thought you would. It taught me not to underestimate Year 4 ever again. What did the lesson help you learn?” I have found this think-aloud strategy very useful when I work with diverse groups of learners who may not have been challenged to think reflectively about their learning. By sharing my personal thoughts (*inner conversations*) in a more public way (*outer conversations*) I tried to open the door wider for students to enter the conversation. When I tried this strategy with this class the students gave answers like “I learnt that you know a lot about maths” or “I learnt that you have nice things to play with”. I learnt very quickly that conversations often need to be channelled or focused on learning and content if they are to be constructive. In this case, my question could have been elaborated by asking “What did the lesson help you learn *about the topic of chance*?”

Summary

While the events that unfolded in this snapshot of classroom life would not be considered exceptional, my purpose in sharing them was to illustrate some of the theoretical aspects of *pedagogy as conversation* that were outlined earlier in the paper. I have tried to demonstrate the reciprocal nature of teaching, learning and assessing in this snapshot of pedagogical practice. In my anecdote, teaching strategies such as listening in to focused and sustained conversations; using sentence starters to elicit thinking, asking students to create their own sentences and using a think-aloud strategy all provided opportunities for learning and assessing learning for both the teacher and the students. Such a blurring of the boundaries between these three educative processes also suggests that the boundary between teacher, learner and assessor could also be blurred. This would mean that in the scenario I have just described, the students were the teachers just as much as the teacher was the learner.

As teachers, we are assessing our own teaching and student learning minute by minute in the classroom no matter how informally. Maintaining a balance between structure and openness during classroom tasks is often a challenging and complex process, but planning opportunities for *inner, outer and written conversations* to emerge can help to determine *how we are travelling* as teachers. Recently I heard about a Year 9 student who told his teacher that “learning is what’s left after I forget what you taught me”. To me, this anecdote exemplifies the powerful need for conversations so that we can find out *what’s left* when we think we have taught a concept or to find out what prior knowledge exists before we begin a topic. Different modes of conversation require us to think about different ways of being with students in classrooms. This means that we need to listen more and tell less, to let go of predetermined destinations and celebrate complexity and uncertainty. As we learn to let go of the predictability of lessons, we become learners along with our students. As teachers, using conversation as a pedagogical tool provides the space for learning together in classrooms.

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Pedagogy is the relationship between learning techniques and culture, and is determined based on an educator's beliefs about how learning should, and does, take place. Pedagogy requires meaningful classroom interactions and respect between educators and learners. The goal is to help students build on prior learning and develop skills and attitudes and for educators to devise and present curriculum in a way that is relevant to students, aligning with their needs and cultures. Shaped by the teacher's own experiences, pedagogy must take into consideration the context in which learning takes place. Pedagogy is a science that studies the essence, patterns, trends and prospects for the development of the pedagogical process (education) as a factor and means of human development throughout his life. Based on the subject, scientists distinguish the theoretical and technological functions of pedagogy as a science. The theoretical function includes a description, explanation and prediction of pedagogical phenomena, technological or practical - the development of curricula, programs, their implementation in the real pedagogical process and evaluation of results. Didactic method " Teaching method. Learning sciences " Interdisciplinary field to further scientific understanding of learning. Geragogy. Gender mainstreaming in teacher education policy. Key words: metaphor, metaphor awareness, metaphoric processing, metaphorical competence, second language learning. Introduction. A metaphor-based word list encourages deep processing, which has been shown to determine successful recall, as words which are semantically processed via elaborative rehearsal and deep processing are more accurately recalled (Craik & Lockhart, 1972; Craik & Tulving, 1975). However, it is not clear whether the encouraging findings in the CMT-based approach to language presentation in these studies are due to the theory itself or other factors. As Boers and Lindstromberg (2008b) note, the learning gain can be attributed to the neat organization of the lexical items under a theme, which is a dominant class of metaphors for teaching and learning focuses on the transmission of information. Many educators also use the language of facilitation, guidance, and coaching to catch what transpires in teaching and learning. Here students set out to accomplish certain learning goals with teachers providing assistance. Finally, the catalyst metaphor suggests that the student learns best when facing cognitive dissonance, and where the teacher's job is to create that dissonance. The definition of education and the metaphors for teaching and learning consciously or unconsciously used in classrooms have an impact on what transpires and on how students perceive them-selves as learners. For example, picture the arrangement of desks in a classroom approximately one-hundred years ago.