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Thinking Classroom serves as an international forum of exchange among teachers, teacher educators, and others interested in promoting democratic teaching practices. The publication encourages professional development, research, and reflection. *Thinking Classroom* features articles that foster learner-centered teaching strategies including critical and creative thinking, active and cooperative learning, and problem solving. The journal also publishes articles about the institutional structures that support these practices.

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Letter from the Editor

Thinking Classroom/Peremena owes a great deal to Wendy Saul, our founding editor. As her official role as Consulting Editor ends with this issue, the occasion provides us an opportunity to acknowledge the enormous contribution she has made to this journal. It was Wendy's vision and tenacity that brought the journal into being; it was Wendy who shaped the scope and focus; and it was Wendy who set the standards we strive to live up to. Although always supported by a strong and deeply committed editorial team, from the outset Wendy led that team with tireless energy, an unfailing sense of what was possible, an honest awareness of what was needed, and a profound respect for teachers and learners. Happily she will remain close by to offer her insights and advice. Thinking Classroom/Peremena is a tribute to her vision and to all her hard work. We, the entire editorial team, would like to say

Thank you.

Touchstones for reflection: Authenticity, autonomy, community

In my own scholarly work I talk about the characteristics of what might be called a *thinking classroom*. Over the past 7 years as editor of *Thinking Classroom/Peremena*, if anyone asked me how to write an article for the journal, I would return to these notions as I offered advice. **Authenticity, Autonomy, Community**—what works for the classroom, works equally well for this journal.

Authenticity leads to saying something you care deeply about to someone, an audience, to whom you really want to say it. Sometimes this is an idea you wish to share, sometimes it is to raise a voice against a perceived wrong. My own favorite articles have been those that authors use to puzzle out a problem or idea *through* their writing. From this perspective, there are many articles I am anxious to read, for instance, pieces that name and address corrupt practices in schools—buying grades, the tutoring industry or student cheating. Teachers are being blamed as collaborators in corruption— is this accurate? Is there anything an

individual teacher might do to change the culture of the school or is this beyond the capability of the individual?

What about research? How much of it is done to satisfy requirements for a degree or faculty promotion? I want to read about surprising findings or about research that helps us understand truly puzzling issues: why can't my students balance their chemistry equations—is it their math skills or the order in which I am teaching or their lack of participation or their background knowledge or...? What about textbooks—are they developmentally appropriate in terms of reading level? Conceptual level? Currency of the information presented?

Autonomy is a notion that has to do with agency, with choice, with that feeling that you can do what needs to be done. I want teachers to view themselves as decision-makers, not technocrats employed simply to follow plans laid out by someone who does not know their students or their context. For me, the best articles in TC/P have both reflected and inspired that sense of autonomy. Autonomy is promoted when a teacher reads an article that makes him anxious to get back to

the classroom and try out a given strategy. Autonomy is promoted when a teacher thinks about an issue in a different way and wants to engage in conversation with the author or her colleagues. Autonomy is realized when a reader is motivated to herself write about the topic at hand.

Community may finally be at the heart of it all. As a teacher I went into the classroom alone and left alone. I had no one with whom to share my ideas or worries or successes. Later I learned to view my students as co-learners and things improved some, but still, I had an adult perspective and longed to share thoughts with other adults who had the same status and power position that I did. TC/P was created to facilitate that sense of community and to mitigate the loneliness of teaching. Pat Bloem and David Klooster talk in their column about our need to expand our notion of who comprises *our* group of students, *our* community. The same can be said of teachers: Are we served well by thinking of our peers and colleagues as the people who teach in our school or in our district or in our own nation? TC/P takes the position—and has from the outset—that we have much to learn from distant colleagues who come from faraway places and other backgrounds, who were trained in different systems.

As an outgoing editor, this is my message and hope for the future: Read, write and think reflectively about your practice. Read and write about what matters most. To do less is to cheat yourselves and ultimately your students and colleagues.

Wendy Saul

Exploring the Nature of Theory in a Teacher Research Community

If classroom teaching in elementary and secondary schools is to come of age as a profession—if the role of teacher is not to continue to be infantilized—then teachers need to take the adult responsibility of investigating their own practice systematically and critically, by methods that are appropriate to their practice.

Frederick Erickson
(cited in Richardson, 2001, p. 301)

A few years ago, I worked with a teacher researcher¹ who had an almost visceral negative reaction to the notion of theory. I had urged the participants in our Teacher Research and Inquiry Institute² to read research and theory that was related to their study and that supported their assumptions about teaching and learning—research that would also support their research methods and their findings. Eve expressed disdain for and refused to read either traditional or non-traditional research that might support her inquiry.

I had asserted that once they had gone beyond their first year of teacher research, when they no longer struggled with the processes, they were very likely becoming theorists in their own right. I suggested that they, and others like them, had a great deal to offer to the conversation about teaching and learning, and that, along with formal theory, they should read the work of other

teacher researchers, and should consider how they, too, could share their work on behalf of others.

Eve resisted the notion that other teacher researchers—published and unpublished—would serve this purpose, because the teacher researchers were not recognized theorists; they were teachers. She couldn't admit that she, by virtue of her teacher research study, was becoming a theorist and that she would have something to contribute to larger, more public conversations about teaching and learning.

As a result of her resistance, we began a series of conversations around the notion of theory and its relationship to classroom teachers. These conversations continued among this group—and others who would follow—for a period of two years.

Intrigued by the issues we raised, I set out to learn more about teachers' relationship to research and the nature of such resistance to it. I was certain that somewhere I would find validation for my belief that their experience as teacher researchers had led them, not only to an inquiry stance, but also to a theoretical one. Furthermore, I needed the language to clarify the delicate balance between the teacher researcher's individual needs—the practical pursuit of an inquiry (which remains the first and foremost reason for engaging in practitioner

¹ The term *teacher research* is inclusive of other similar labels, such as *action research* and *practitioner research*, for the systematic examination of instructional practice.

² The Teacher Research and Inquiry Institute is a program of the Southern Arizona Writing Project which is an affiliate of the National Writing Project. (See <http://www.writingproject.org>.) The institute, offered for graduate credit at the University of Arizona, provides kindergarten–university teachers a collaborative setting in which they can conduct a systematic examination of teaching and learning in their classrooms.

research)—and the impact that her findings might have on other practitioners with whom she shares her story. The *story* told reflects theory generated by inquiry.

It also occurred to me that I needed to clarify for myself what I meant by *theory*. I began with a relatively simple, practical definition. I have long believed that thoughtful teachers continuously self-evaluate and assess; they “read” their students and make adjustments to their instructional practice in a conscious effort to increase student learning. What thoughtful teachers *know* about teaching and learning in their classrooms is the basis of their practice and constitutes their theoretical viewpoint. Judith Newman (1998) provides a perspective on the origin of this knowledge (her own theoretical stance). She describes it as the intersection of her experiences in the classroom, her interpretations and speculations about that experience, and the research literature she has read. This, I believed, was what I was thinking when I suggested that teacher researchers become theoreticians as a result of their inquiries.

The value of teacher research

There are many different definitions of teacher research (or action research, or reflective practice). In examining the differences in a multitude of classroom research models, the *question* is a common element. The teacher researcher is a questioner, one who pursues the answers to the questions that arise in practice. Such questions may originate in what Susan Lytle (1993) calls a “felt need—the gap between what you’ve got and what you want” (p. 7). The value of teacher research is in the pursuit of answers to the questions that will help us close that gap.

For example, Denise, one of the teacher researchers in our group, saw that her gifted elementary students often lacked acceptable social skills, so she posed the question, “What will happen to students’ behaviors and the quality of their work products when specific social skills are taught?” Using the work of Daniel Goleman (1995), Denise focused on aspects of emotional intelligence and she provided instruction that supported student social development.

In making decisions in the classroom, we are guided by our individual theoretical base—whether we acknowledge

having one or not. Our beliefs and assumptions about teaching and learning guide our decision-making. We may attribute much of our own theoretical base to those research-based practices that resonate for us and for learning in our classroom. When Gerry, an elementary school librarian, began to examine her questioning techniques with kindergarten students, she began to see areas that could be improved. She read widely about effective questioning, and she adopted a number of new questioning strategies to support their engagement and comprehension of the stories she read to them. Certainly, her theoretical base was shaped by what she read of the research, but also by the application of the theory in her practice.

Other questions that teacher researchers in our program have pursued include the following:

- If students are given the opportunity to create and use their own scoring rubric for their independent study project, will the overall quality of their projects improve?
- What happens when students reflect on their learning and have opportunities to share their reflections with teachers?
- What effect does dialogue before writing have on the quality of student writing?
- Will kindergarten students develop positive attitudes about writing if the teacher actively promotes writing in the classroom?

Implicit in these questions is dissatisfaction with some aspect of student learning and a planned intervention to bring about improvement. This is the principle that guides teacher research in our program and which allows teachers to focus on improving their practice. Carrie Brennan (2002), who co-directed our Teacher Research and Inquiry Institute for a number of years, provides a concrete example of this improvement:

In the conclusion of her working paper, Deborah Green explains new knowledge she gained about literacy through her project. “Two years ago when I began looking for ways to improve my students’ writing, I believed that if I provided good models, interesting lessons, and helped students find ways to improve their writing, they would become better writers. It wasn’t

until I moved past the lessons and tried to understand how my students use language that I was able to help them" use dialogue to successfully strengthen their writing skills. Through careful observations of her students and close analysis of their written work, through open questioning of her own prior teaching practices, and through thoughtful reading and application of published research, Green held herself accountable to implement innovative strategies that resulted in increased writing skills for her primary-level students (p. 4).

Teacher research, or action research, according to Rankin (1999) "calls for a practitioner to develop a theory within a system, with the goal of doing something to improve that system: theory leading to intervention, research resulting in an action" (p. 109). Technically, then, when we pose a question and implement an intervention that we anticipate will improve learning, we are posing a theory that we will test through our classroom research. That theory will be validated or refuted through our examination of the data, often in a collaborative, supportive community. In either case, our own theoretical base is changed.

As Frederick Erickson (cited in Richardson, 2001) pointed out, "teachers need to take the... responsibility of investigating their own practice *systematically* and *critically*, by methods that are appropriate to their practice" (p. 301) (emphasis added). A systematic approach to investigating teaching and learning involves a careful collection and analysis of data, both qualitative and quantitative, and a thoughtful and critical review of the findings and conclusions that emerge. This can be very effectively facilitated through a community of teacher researchers who can offer both support and different (sometimes opposing) lenses through which to see our findings. As theory develops out of our work, often it is through the difficult conversations that characterize effective teacher research communities. Our personal theories can be quite fluid and flexible, as we interact with our students and our instructional program, making decisions on a daily basis about how to best address the needs of our students. But when we bring those theories into a thoughtful community and we collaboratively wrestle with the notions that are emerging, we often find these discussions help generate robust and trustworthy theory.



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Teachers' perspectives on theory

Among many of the teacher researchers I worked with locally, however, there seemed to be a very narrow definition of educational theory. They generally believed that it evolves from quantitative research using experimental studies and control groups. Consequently, it was difficult for them to imagine their work somehow producing theory of any significance. They believed that theory generated by those in the academic realm would be "big T theory," while any theories we generated for ourselves and in our own classrooms would be "little t theory." This distinction provided the framework for many of our discussions.

Gerry summed up the prevailing belief when she said:

One of the reasons I enjoy teacher research is that there is a nice blend of practical and theoretical. My teacher research stems from a need I have or a question I want answered and goes to the theoretical as a means of discovering what others have done in this same area. I do not need theoretical validation to solve my "problem" or answer my question, especially if I am part of a teacher research community which provides support and friendly criticism...

I am afraid that a continuum to a theoretical stance may simply be a euphemism for becoming more quantitative and more like academic research. Do we really need that theoretical overcoat to believe that teacher research is valid and worthwhile? I don't think so.

It is notable that both Denise and Gerry looked to the work of others to support their inquiries, but didn't seem to associate these sources with Big T theory. Gerry

sees theory as something apart from herself and believes that becoming a theoretician means abandoning organic research in favor of the more respectable quantitative, academic research. Unlike Eve, though, she is willing to turn to research for examples of others who have pursued similar questions. Even though she initially rejects the notion that she, herself, has become a theoretician, she later says:

If the idea of transformation to a theoretical stance means that as teacher researchers we become more involved with other teacher researchers and other groups promoting TR then I think this is valid. We can take our own stance on TR and promote TR with others with whom we are in contact. We can gradually move out from our own concerns into the wider world...

She gives teacher researchers the benefit of the doubt—they are theoreticians in a limited environment. That is, only among other teacher researchers can they gain recognition and make contributions. For her and the others it would be lower-case theory.

Unfortunately, when teacher researchers reject the seemingly incompatible views (or conclusions) proposed by traditional research, they rarely have a venue through which they can publicly defend their positions. Teacher research is the mechanism by which teachers *can* define their views of the world of teaching and learning and give voice to these views.

Teachers' perceptions of "traditional" research

Rankin (1999) emphasizes Cochran-Smith and Lytle's (1993) point that "widespread dissatisfaction" with traditional research comes about because society (particularly the educational society) has a long-held view that knowledge about teaching and learning is "the privileged domain of university-based researchers," and teachers have had little encouragement to engage in their own forms of research on their own practices. He goes on to assert that the methods of professional researchers are often incompatible with the way teachers actually think about their practice and that the generalizations of the research are often at odds with the actual knowledge that teachers have about teaching and learning.

Teacher research, in fact, is a form of research that is compatible with the way teachers think about their practice and how they act upon the issues that influence learning in their classrooms. Furthermore, there are a number of qualitative academic research models that are compatible with teachers' ways of thinking about their classrooms. Indeed, such models are increasingly encouraged in formal, academic research settings, but teachers may have had limited exposure to them.

Unfortunately, the propensity of U.S. school systems and state boards of education is to jump on the bandwagon of any quick-fix program and disseminate it to teachers with instructions to implement it immediately, only to abandon it sooner rather than later for the next program *du jour*. This has had a tendency to make the most dedicated teacher skeptical of research. Wollman-Bonilla (2002) laments this practice, pointing out that it is more difficult for teachers to "teach in ways they have refined through practice enhanced by ongoing professional education. When they protest the imposition of the tenth new program in the past 20 years, the answer comes back: 'Research says'" (p. 314). Furthermore, she asserts that "many teachers are conditioned... to think that teaching is simply about adopting an expert's method or faithfully executing lesson plans from a teacher's manual" (p. 314).

The academy has not always welcomed teachers into the ranks of researchers, and at times the "producers" of research have sought, at the least, to marginalize teacher research, thus guarding their exclusivity to production of knowledge about teaching and learning. The 2001 *Handbook of Research on Teaching* (Richardson, Ed.) represents the first time any edition of this important volume paid any attention to practitioner research. Kenneth Zeichner and Susan Nofke, authors of the chapter, explored the lack of attention to such research and pointed out that practitioner research is rarely taken seriously except as a particular form of professional development. They cite Bridget Somekh (1993):

If action research is not recognized as a research methodology, the knowledge generated from action research is neither taken seriously

nor disseminated widely and effectively. The knowledge is seen merely as an outcome of a professional development process, devalued into something which concerns only the individual who carried out the action research—local, private, and unimportant. In this way, the operation of power in the social system works to neutralize the voice and influence of practitioners and promote the hegemony of traditional academic researchers. (Cited in Richardson, 2001, p. 298)

Zeichner and Nofke (2001) catalog the criticisms of practitioner research: it is an inferior form of research with less rigorous standards than academic research (Borg, 1981, cited in Richardson, 2001, p. 299); it is a “hobby,” or “game” and is “no place for an amateur” (Hodgkinson, cited in Richardson, 2001, p. 299); it is of questionable value because the populations under examination are not representative of, and therefore not generalizable to, other populations; the demands of teaching militate against teachers doing research and teaching effectively at the same time; teacher researchers exploit their students at the expense of quality teaching; and finally, teachers would use their research to justify questionable teaching practices by citing their prior studies (Zeichner and Nofke, 2001, p. 299).

Is teacher research inferior to and less rigorous than academic research? I would posit that it is *different*, not inferior, and it can be rigorous, given a dynamic collaborative community through which to test our findings. As for generalizability, Michael Bassegy (cited in Whitehead, 1998) argues that:

The conclusions of research should only be generalized... if it is clearly established that the general population has the same characteristics as the population which has been researched... To assume that the findings from one study of a small group... can be extrapolated to others who fit the same description is nonsense! It is nonsense because there are so many other contextual variables, which may determine what happens—variables of personal history, of understanding and of intention of all the actors involved, as well as variables of setting (1995, p. 111).

In essence, then, generalizability is a questionable concept in any research, academic research included, since populations of subjects cannot be replicated. When Susan Lytle (1993) asserts that



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teacher research is not about doing research, but about becoming a better teacher, she dismisses the need for generalizability.

However, I would argue that in becoming a better teacher as a result of our inquiry practices, and by participating in an inquiry community, we are in the process of developing and disseminating theories that will impact other educators. Certainly, what we did cannot be replicated, and even if it could, it would not offer exactly the same outcomes for others. Bassegy (cited in Whitehead, 1998) refers to the context specificity of teacher research as a “singularity,” which “... is a set of anecdotes about particular events occurring within a stated boundary, which are subjected to systematic and critical search for some truth. This truth, while pertaining to the inside of the boundary, may stimulate thinking about similar situations elsewhere...” (Bassegy, 1995, p. 111). It is in the stimulation of thinking and the engagement in dialogue with other teacher researchers that greater truths emerge. And because we are investigating our own teaching practice, generalizability is not necessary. It is about teaching and learning in our own classrooms.

In reality, theory (from whatever source) must constantly be judged by practice, and subsequently by improvements in student achievement. Practice should likewise result in the modification of existing theory or the development of new theory. Even the best research

is worthless if it can't meet the test of practice and student learning. Fionnuala Flanagan (2002, p.21), a master's student from Dublin, speaks eloquently about the relationship between theory and practice when she says, "In action research the theory being based in practice is itself transformed by the transformation of practice. The research is brought about by a change in practice, which informs theory. Consequently, theory and practice need each other" (p. 20).

Theory, living theory, and praxis

Zebroski (1994) offers five characterizations of theory:

1. Theory is a view, a vision of the world.
2. Theory is a guide to action as well as an action.
3. Theory is unavoidable (resistance to theory is a theory).
4. Theory is created and can be changed.
5. Theory moves (in sometimes strange and subtle ways) into practice, and practice invigorates and reinvents theory (p. 270).

It seems to me that each of these is compatible with classroom practice and with teacher research. If, as Zebroski suggests, theory is a view, a vision of the world, then each of us is a theoretician in that regard. We bring our own classroom contexts into our research, and those contexts inevitably define our view of the world of teaching and learning. Perhaps this is why, for many teachers, traditional research has failed to shape their view and vision of the classroom world. The theories grounding much of that research simply cannot "capture the dynamic multiplicity of personalities, sociocultural backgrounds, personal and curricular issues, events, expectations, and external demands that are constantly in teachers' minds" (Wollman-Bonilla, 2002, p. 313). Furthermore, teacher researchers find that their actions as researchers promote improved teaching and learning in their classrooms while these actions are guided by the research questions they pursue.

When Zebroski (1994) says that theory is unavoidable, he challenges us to acknowledge that we do, in fact, have a theoretical base from which we operate. How could we possibly teach

without a powerful knowledge base about teaching within our content area and about how instructional practice influences learning? What we know and what we believe about teaching and learning—our theories—continuously guide our thinking.

Theory is created and can be changed. We do it every day in our classrooms and with our students. We probably revise our theories every school year when we face a new population of students or begin teaching something we haven't taught before. Theory and practice are inextricably intertwined. Theory moves, as Zebroski points out, into practice, and practice invigorates and reinvents theory (p. 270). That's simply the nature of teaching. This movement back and forth is commonly called *praxis*, a term which may have originated with Karl Marx, who defined it as the "unity of theory and practice. He argued that... your actions should reflect your beliefs and your beliefs should determine your actions" (Burgess, n.d.).

Furthermore, Zebroski (1994) says that "students and teachers are usefully entangled in theory every time they talk, read, write, and wonder about who they are and what they are doing and where they are and where they are going to go next and why" (p. 270). This leads me directly to Jack Whitehead's (1998) notion of "Living Theory." Whitehead defines his "living theory" paradigm of educational research as a "reconstituted meaning of 'theory.'" He says that "each individual action researcher is creating her or his own living theory in the explanations for their professional learning in their educational inquiry," and that "living theory begins in practice." And, he asserts, it begins with the teacher researcher's posing of a question that relates to examining her or his practice to improve teaching or learning or to test her or his values against her or his teaching practice. Flanagan (2002) cites Whitehead and others who say that "if you can provide a valid account of how you improved education through your action research, you have contributed to the creation of living theory" (McNiff, Lomax, and Whitehead, 1996, in Flanagan, 2002, p. 21).

That the teacher researcher is embedded in the research and in the context

of the classroom means, of course, that such research is an effective form of professional learning. This professional learning, however, is different and distinct for each teacher researcher (Whitehead, 1998). Each one learns those truths that apply to their contexts, illustrating Whitehead's notion of *living theory*.

Anne, one of the teacher researchers who participated in our original discussions, is a teacher who describes herself as a "walking theory-into-practice person."

Being a bilingual educator, I have been called to support my practice often with friends and/or relatives... I've constantly trained myself to take the T and put it into practice in my own classroom. Throughout the years when bilingual education was popular yet misunderstood, I could quote theorists Jim Cummins and Steven Krashen many times as well as Vygotsky. In addition, I fought for holistic curriculum, often presenting my own theories blended with those of others and published how I put those theories into practice. I live my theories and beliefs. I stand on my soapbox—I even tell my students why they are doing what they are doing by explaining the research behind it... Now more than ever we teachers must back what we do with our theory.

In our discussion on the closing day of the Teacher Research and Inquiry Institute during that first year of our conversations, I asked each of the participants to respond to the following thoughts by Ruth Devlin, from the Southern Nevada Writing Project:

Maybe when teachers begin the walk down the TR road, they can't see the whole forest—they can only watch their feet go down one in front of the other on the path. The longer we walk, the more we are able to notice the others who are on the path with us, the things they bring with them on the journey, and the wider view of the whole. (Devlin, 2003)

I asked our group to reflect on Ruth's metaphor in light of their own experiences with teacher research and to think about where they thought the path might go for them.

Eve, our theory-resistant teacher researcher, wrote a response that was remarkably consistent with Whitehead's notion of *living theory*. When I read his work, I recognized Eve's ideas in his thinking. Even as she unintentionally, but eloquently, illustrates the notion of *living theory*, she is uncertain about it. It



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raises questions for her in terms of the validity of what she has done. A legacy of being conditioned by traditional notions of research and theory? Perhaps.

There is no "the road." In fact, the perception that there is the road or the path that exists independent of the researcher's feet, some proverbial road out there that we need to "get on," is taken literally and sometimes causes anxiety.

We create the road. Our own roads. What is true for Gerry is not true for me. What is true for me is not true for Amy. My road starts with what I see, and why; or I even see it in the first place as inherently linked to my own version of reality.

The ancient Greeks believed... that our eyes actually projected light onto the world and that was how we were able to see reality. I think this idea of projection is relevant to TR. It starts in our hearts. What do we value? I value freedom. It's no coincidence, therefore, that I look out and "see" that choice is important to kids, that they respond well to it, that they learn better when making choices. Of course, I'm going to SEE that.

But again, I've projected that onto my class. And because it starts in my mind and in my heart, then perhaps I will only shine the light on the instances that support this belief.

So, back to the path. Any whole forest that I happen to see or path that I happen to notice will only be one that I have created by virtue of turning my gaze to it. It won't even exist until that occurs. The trees are just now growing, one at a time, and the only path is what I've already walked. I can only assume that those other travelers see their truest paths, but I may not.

We can share experiences and get inspired by travel stories, but I can never really go

where Karen went because that place, just the way it was, existed only for her.

Where do I see myself going? I just see myself going, and stopping, and then going. Is this science? Does it have to be?

Eve sees the road as theory, and resists the idea that she must direct her steps in some predetermined direction. And she's right. It's all about the theory that we create for ourselves from our own context and our own research.

Does it matter, then, whether it is upper- or lower-case theory? Does the distinction really matter in the long run? Perhaps it matters to some; perhaps it doesn't matter to others.

I believe I found what I set out to find; however, I may have "turned my gaze," as Eve says, to Zebrosky and Whitehead because they confirmed my thinking. When I measure these ideas against my original definition of theory, I'm comfortable with that. It must have been *living theory* I was looking for all along.

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Sharon Miller is the Co-Director for Teacher Research and Inservice programs of the Southern Arizona Writing Project at the University of Arizona in Tucson, Arizona, USA. She was an RWCT volunteer in Azerbaijan.

Effective Leadership and Management: A Training Course and Its Lessons

The idea for the course described in this article grew out of a family situation. In October 2004, the family of one of the authors were researching opportunities for sending their son to study in the U.S.A. While analyzing grant requirements it became clear that, along with high academic results and knowledge of English, all applicants were supposed to demonstrate leadership qualities and write an essay on the topic of leadership.

*The parents of the potential applicant asked themselves: What is implied by **leadership qualities**? How can a high school graduate prove that she or he has them? Certainly there may be formal indications, such as being a class prefect. But what if a teenager has never held any position in the official school hierarchy? Do we then conclude that she or he does not possess any leadership qualities? The parents immediately remembered a related episode: When their son was in middle school there were constant conflicts and even fights in his class. A consultant psychologist diagnosed "too many leaders in one group."*

The next questions were: Are leaders born, or made? And if they are made, how can the development of leaders be supported in school?

Provoked by these questions, we started studying the literature on leadership and available leadership-training programs. This resulted in the development of a new three-day, 20-hour (8+8+4 hours) course module, *Effective Leadership and Management*, which is now included in various special-purpose courses at the Department of Management and Commerce at Nizhni Novgorod State University.

Course methods are based on the interactive learning approaches of RWCT (Reading and Writing for Critical Thinking, www.rwct.net) which have been practiced in our department since 2000. In the course of six years we have gained extensive training experience with different kinds of participants. However, the most valuable experience turned out to be the course on critical thinking philosophy which we delivered for administrators of various levels. It was the response from this audience (see one of the com-

ments below) that encouraged us to take the initiative and design the *Effective Leadership and Management* course.

The course on developing critical thinking through communication and argument made it clear that a group of thirty people will never come to agreement when pondering over philosophical questions. In fact, this course teaches us to see different viewpoints, document them, and explain to people that in discussing philosophical issues there can be no single answer that is correct and acceptable for all. A leader must understand this, and later, in his own practice of decision making, try to find a balance knowing that all people are different.

A. Pestryakov

Certainly it was important that the leadership course be designed as a proactive one, with special emphasis on the development of actual leadership qualities. And again we were tormented by questions: Who can be called a leader? What qualities are characteristic of leaders as

Table 1 Common qualities of successful leaders

Mental abilities	Character traits	Learned skills and abilities
Intellect and logic	Initiative	Ability to secure support
Good judgement	Flexibility	Cooperativeness
Insightfulness	Vigilance	Ability to win popularity and prestige
Creativity	Honesty	Tactfulness and diplomacy
Curiosity	Personal integrity	Ability to take risks and assume responsibility
Intuition	Boldness	Organizational skills
	Self-confidence	Ability to process and interpret large amounts of diverse information
	Steadiness	Persuasiveness
	Independence	Sense of humor
	Self-reliance	Ability to understand others
	Ambition	Good public speaking skills
	Being achievement-oriented	
	Persistence and perseverance	
	Vigor	
	Authoritativeness	
	Industriousness	
	Assertiveness	
	Striving for excellence	
	Responsibility	
	Reliability	

opposed to non-leaders? Are there means to develop such traits? To what extent is the RWCT approach applicable for conducting a course that incorporates leadership training?

Management guidebooks list many traits and skills of a leader. Table 1 (based on Vikhansky & Naumov, 2002, p. 484) seemed to us the most informative in terms of what to teach and how to teach.

For teachers and faculty extensively using interactive methods, many points in Table 1 will seem familiar. It is clear that the teaching-learning process designed with the methods offered by RWCT (Meredith & Klooster, 2002; Zagashv & Zair-Bek, 2003) develops many traits

of a good leader, including the capacity to process and interpret large amounts of information, cooperative abilities for working in groups and organizing group work, persuasive abilities to gain supporters for one's course of action, and finally, consideration of others' opinions, and tactfulness in expressing views which may be different from those of others.

One additional argument in favor of using the strategies promoting active learning and critical thinking for delivering this course comes from the work of Rajan and Van Eupen (1997) who conducted a survey of leadership qualities, and later compared these data with similar data from surveys undertaken in the 1980s (Table 2).

Table 2 Comparison of Leadership Skills

Top five skills in order of importance	
Late 1980s	1995–1997
1. Strategic thinking	1. Ability to inspire trust and create motivation
2. Entrepreneurial skills	2. Visioning
3. Originality	3. Ability, willingness, and self-discipline to listen
4. Flair	4. Strategic thinking
5. Problem-solving skills	5. Interpersonal communication skills

This comparison is quite informative. As we see, over time the main emphasis has shifted from the personal qualities of leaders to their interpersonal abilities, such as their communication skills, their ability and inclination to listen to others, and their capacity for creating an atmosphere of trust. The RWCT approach also is aimed at creating an atmosphere of trust and motivation and it demonstrates the advantages of providing such a learning environment for students.

Having made sure that we had the necessary interactive strategies to deliver an engaging leadership workshop, we proceeded to develop a concept and content base for such a session. Our starting point was the leadership notion itself, which we defined as the process by which a person *influences* other members of a *group* in order to achieve the *goals* of this group or organization (Shackleton, 1995; Stout, 2001; Torrington, Hall, & Taylor, 2002; Vikhansky & Naumov, 2002). Of course, this is only one of many different ways of conceptualizing leadership, which carries with it many assumptions and values, but it proved helpful in our case because it gave us an opportunity to construct the course around these three key notions of leadership: *influence*, *goal*, and *group*.

1. The content component is devoted to the mechanisms of *influencing* people, from the perspective of leadership and power.
2. *Goal* setting takes place when we talk about the alignment of leaders' values and goals with those of their followers.
3. Uniting the *group* under the leader's direction occurs in the process of pair and group work.

Below we would like to share some of the "lessons" we, the course facilitators, gained from the course. We hope that these lessons will prove useful not only to university faculty but also to high school teachers and to those colleagues who work with in-service teachers.

First, our experience showed us that when you work with adults, it is most important to explain what instruments (approaches, methods, strategies) you are going to use for focusing upon this or that leadership quality in this particular

group within the time allotted for the course.

Then, if you want your goals to be internalized by the participants, it makes sense to give them an opportunity to compile their own list of qualities needed for a leader. In the case of high-school students, the task may prove difficult. If so, you may wish to offer one of the available lists (Table 1). In any case, while discussing their own or existing lists the course participants will realize that some of the leadership qualities are innate, while others are developed in the course of life and are expressed in particular skills, which can be formed, cultivated, and perfected. It's a good idea to place the list worked out by the participants where it is easily visible for ease of reference. As our experience demonstrates, this is an open-ended list that tends to change and develop all the time, depending on the participants who are contributing.

At the end of this stage of work we found it useful to offer for discussion a well-known quote by Calvin Coolidge, the 30th president of U.S.A. (1923–29), which ironically has become the motto of the McDonalds fast-food empire:

Nothing in the world can take the place of persistence. Talent will not; nothing is more common than unsuccessful men with talent. Genius will not; unrewarded genius is almost a proverb. Education will not; the world is full of educated derelicts. Persistence and determination alone are omnipotent.

Of course there may be lots of other quotations from other recognized leaders, but this one works quite well because it seems to focus on qualities essential for success. Besides, it stimulates interest and never fails to provoke a discussion. We should note that it is unlikely all your participants will agree with this idea of Coolidge. Give them time to reformulate it in such a way that it fits their interpretation of the assertion. Display their new wordings where they can be considered by all. As a result of the discussions that arise at this stage, the participants collectively come to the conclusion that no theory of character traits and abilities can provide a universally applicable description of an ideal leader.

From this point we move on to the study of behavioral and situational models of leadership. Our course participants

Kurt Lewin, a renowned scholar, researched the relation between the style of leadership and its effectiveness. He and his colleagues (Lewin, Lippitt, & White, 1939), defined three leadership types which are presented in the chart below.

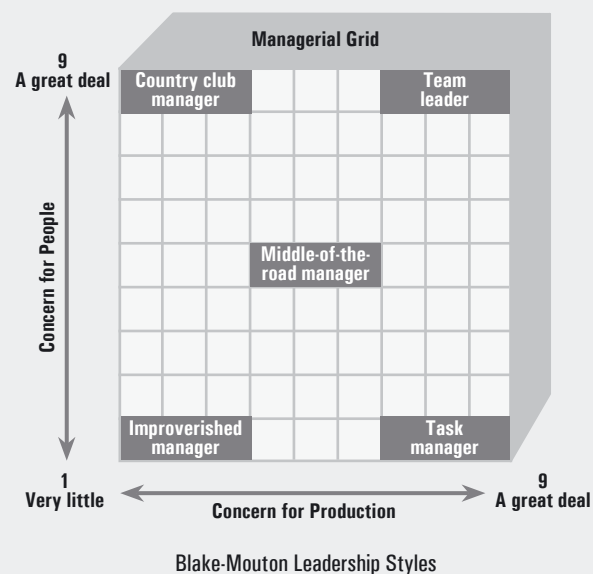
We consider his categorization to be usefully applicable to the educational context. For instance, when teachers are aware of the strengths of the school's leader (the principal), they can benefit from them; knowing the leader's weaknesses makes it possible to try to neutralize them in advance. By the way, at this point in the course we typically had a heated discussion amongst the participants because many teachers claim to prefer an authoritative (but knowledgeable) principal and many students prefer authoritative (but fair) teachers, which means that not everyone is in favor of a democratic style in the teaching-learning process.

Three leadership styles (based on Lewin, Lippitt & White, 1939)

	Autocratic (Authoritarian)	Democratic (Participative)	Laissez-faire (Delegative)
Nature of the style	Leaders concentrate the power and responsibility in their hands. Decisions on goals and means are taken by the leaders without consulting with others. Communication streams go from the top downwards.	Leaders encourage group members to participate, but retain the final say over the decision-making process. Decision making occurs on several organizational layers according to participatory principles. Active communication takes place in both vertical and horizontal directions.	Leaders abdicate their authority and perform little actual leadership. The group is given an opportunity for absolute self-governance. Communication is mainly horizontal.
Strengths	Best in situations where there is little time for group decision-making. Orderly. Results are predictable.	Through participation in decision making, each group member becomes more responsible as an individual.	Allows the group to start and proceed on their own, without interference from the leader.
Weaknesses	Individual initiative is suppressed.	Democracy requires much time for decision making.	The group may lose speed and direction without the leader's intervention.

For working with in-service teachers, it may make sense to pay more attention to the Leadership/Managerial grid developed by Blake and Mouton (1969) to conceptualize leadership styles and relations. The grid consists of two behavioral dimensions, *Concern for Production* and *Concern for People*. As illustrated in the table below, Blake and Mouton characterize five different leadership styles according to the varying emphasis on each of these two dimensions (with a range of 1 to 9 on each continuum). They suggest that the most effective leadership is characterized by the combination of high concern for production with high concern for people.

The Blake-Mouton Managerial Grid (© www.cjbaxtergroup.com/images/blakemoutonleadershipgrid.jpg)



This famous grid was created based on the extensive research of real-life managers which confirmed the original hypothesis that the 9,9 style (team leader) proves to be the best, regardless of the situation. The grid's dimensions offer any manager a useful way to conceptualize leadership. For example, in the sphere of education, a school principal might assess each teacher's style using the Blake-Mouton grid and recommend that those who have problems in their relationship with students (style 9,1) attend in-service training with a strong psychological component, which would include communicative skills training based on student-centered methods. A teacher who lacks interest in the subject and has difficulties with the program content (style 1,9) may be advised to attend a course that would brush up his or her content and curriculum design knowledge. Teachers whose style is around 5,5 may choose to develop in any direction. However, style 1,1 should make the school administration doubtful of the teacher's ability to change his or her work and behavior in any way.



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are expected to become familiar with a number of perspectives and theoretical positions on leadership and power. We select material that we believe leaders would be able to use in their future practical work, as these theories discuss various ways of influencing other people. This information may prove useful for school principals, deputy principals, and teachers as well, as teachers also are leaders and managers of the learning process (see Appendixes 1a and 1b).

For studying situational models of leadership, cooperative strategies such as *jigsaw* (Aronson & Yates, 1983), have proven very effective, as the participants' main task here is to help one another comprehend the essence of each model within a short period of time and jointly, in a group, undertake a comparative analysis of the studied concepts. Parameters for comparison should be defined by group members themselves.

While planning courses such as the one described here one needs to bear in mind that goal-setting itself (both for teams and for individuals) and the work to achieve these goals demand considerable effort from participants. This means that warm-up activities and content-rich breaks during the session are a must (see Appendix 2). Along with eliminating the stress and elaborating on the main concepts of the course, icebreakers can help

activate affective, cognitive, and psychomotor domains (Melvin, 2001) and support three types of communication: informative, interactive, and perceptive (Korotayeva, 1997). For example, in the *Human Machine* icebreaker, practice in informative communication occurs when each participant selects one of the roles and identifies and discusses the information related to this role; interaction is practiced when participants actively exchange information about their roles in the functioning of the whole "machine" at the preparation stage; and perception and mutual understanding are exercised at the final stage, that is during the performance itself.

It is commonly recognized that leaders do not need to know all the answers, but they do need to ask the right questions (Heifetz & Laurie, 1997). That is why we considered it necessary to include a session on posing questions, which, in our course, we combined with an interactive lecture. Using key words from the lecture, participants made up questions which were first discussed in groups, and then the questions identified by the groups as most significant were written on the blackboard and became guidelines for the lecturer. The lecture focused on the topic of the foundations of authority. As soon as the audience became immersed in the topic they immediately asked:

1. Jars and Strings

To make a natural link to the idea that there can be no universal style of leadership applicable in all circumstances, and that for every particular situation it is necessary to select a suitable style (the essence of situational models of leadership), we carried out a warm-up activity which we gratefully picked up from in-service teachers in the Nizhni Novgorod Institute of Education Development. There are two jars, one of which is a bit smaller than the other and can fit into it. The smaller jar has holes in its sides through which colored strings are passed and fixed with knots. Each participant takes a string and pulls on it, and as a result the smaller jar is lifted in the air and hangs in the middle of the human circle. The trainer puts the bigger jar on the floor inside the circle and asks the participants to lower the smaller jar into the bigger one. People are allowed to bend down, crouch, move their arms, but they cannot step away from their initial place. The first round is performed by all participants together and they may talk, so leaders appear spontaneously. In the second round participants are forbidden to talk while the task remains the same. During the third round they choose a leader and then follow his or her commands silently and blindly, as they also have to close their eyes. And, finally, a leader (preferably someone who has not been among the participants in the previous rounds) is appointed by workshop facilitators, and the appointed leader supervises the process while all the others are silent and their eyes are closed. Note that each time the bigger jar is put in a different location. In the end, the group members share their impressions and analyze what influenced the effectiveness of group work in each round.

2. Human Machine (Melvin, 2001)

We recommend using this icebreaker before starting work on group goal-setting as it is guaranteed to clear the air of tension and help participants relax and return to active work. A group of 4 to 6 people think of a familiar machine or device and physically represent how it functions, using only nonverbal means. It is important that each group member plays a distinct role that represents a component of the device. For preliminary discussion and rehearsal, groups go to different areas. When all the groups return they take turns demonstrating their machines and the others guess what is being shown. If this icebreaker is offered at in-service training sessions you may expect an extra outburst of laughter and exhilaration when the actors playing “plungers” or “hoses” enumerate their real-life titles, positions, and ranks.

3. Ecological Council (Tarasov, in Alekseyev et al. 1992)

Actually a business game rather than a warm-up, this activity stimulates collective decision-making and acquaints the participants with the phenomenon of synergetic effects in collective work. This game is also interesting in terms of its ability to reveal the leadership traits of each participant and their psychological compatibility in a group. Each participant assumes the role of an ecology expert who must prepare a program of measures to resolve environmental problems on several levels: for

a typical industrial enterprise, for the territory of a region or state, and for the global community. The program is to be considered by an *ecological council* (other members of the team) and a final decision should be made on whether it is to be implemented. Participants get forms where ecological actions for all three levels are listed in random sequence. Their task is to rearrange the lists on the basis of the importance of this or that action for resolving environmental problems of an enterprise, region, and planet. First they do it strictly individually, then participants get together in teams of five to seven people. The task remains the same. However if even one of the team members does not agree with the sequence of nature protection measures developed as their joint product, the team has no right to fill out the group form. After the *ecological councils* have finished their work, the facilitator declares the result that is the ecological effectiveness calculated with the help of a computer. The data on the whole group are entered into a large chart and the analysis of this chart shows how well participants in the game are able to discuss issues cooperatively and make optimal decisions. Psychological compatibility is also checked. If the group's total error is smaller than the errors made by any of the group members, the group is considered psychologically compatible and capable of effectively solving serious problems.

4. The Snake (Shapiro, 1995)

This warm-up is ideal for getting a practical notion of a difference between a leader and a manager, and also for combatting intellectual and physical fatigue. All participants form a chain (a big snake) and only the first person, the *snake head*, and the last, the *snake tail*, are allowed to keep their eyes open. The rest hold tightly to each other and close their eyes. Participants may choose who will be their *head* (i.e., the leader) and *tail* (administrative reserve, or manager). The snake starts moving cautiously, in small steps. All participants try to feel a part of the whole, of a long snake. They may not talk or produce any sounds, they may not open their eyes before a signal, they can only listen, smell, and use their other senses. The *body* should be unaware of the route. The *head* and the *tail* bear joint responsibility for the movement. Though the latter does not know where the *head* will direct them all, it can guess, as its eyes are open too. After the *snake* returns to the room, the trainer gives a signal to those in the *body* to open their eyes. They try to describe where they have been and how they knew or felt it, while the *head* and *tail* confirm or deny their statements; then all participants share their impressions of the roles played. Using the participants' statements, the facilitator will draw the basic conclusions: the leader is responsible for choosing the way, the manager—for following the chosen way; the leader makes the right choices, the manager chooses the right actions. Participants in this warm-up activity often note that it is very important that the *body* trust the *head*, only then do they feel safe and secure. From this idea facilitators can lead into a discussion about the traits of a charismatic leader and whether, why, and when such leaders are needed.

What is the difference between a manager and a leader? If your participants are educators you may wish to discuss the forms of power that teachers have traditionally had, and the changes that occur in the mechanisms of influence when active learning and student-centered approaches are used in class.

In the context of this lecture (and warm-up 4—see Appendix 2) we introduced the popular concept of *post-heroic* leadership, which denies that the efficiency of an organization lies with a single all-knowing leader and states instead that it is important to delegate leadership functions to many group members so that they learn to take responsibility. Such dynamics can be readily illustrated by reference to teacher-student relationships: In traditional systems of instruction the teacher is the only official leader of the lesson; however, if methods of active learning are used, the teacher, though she or he remains a leader, has different objectives and assumes a different type of authority, here classed as post-heroic.

The main condition for the success of a post-heroic leader and for creating an efficient team is the leader's skill in convincing others, in inducing people to express their opinions, in leading them towards a goal, and in ensuring frank feedback (Senge, 1990). Therefore, we chose persuasive essay writing for the final course assignment. In order to polish the various elements of argumentation (thesis—arguments—evidence—counter-arguments—conclusion) it was necessary to hold a special session devoted to argument as a basis for convincing people. The quality of written work will be higher if participants can base their skill of argumentation on carefully selected texts. In our course we used the article "Mozart and Salieri. Again?" (Boris Kushner, 2001) in which the author tries to discredit the myth about Mozart being poisoned by Salieri. This article attracted us not only because of its intrigue but also because it supports the construction of several chains of argument. Working in a group, students dealt with all unclear paragraphs together and found all elements of argumentation without effort. An example of the participants' argumentation is presented in Appendix 3. The group that used this argumentation during the session succeeded in

Thesis: Salieri was not guilty of Mozart's death.

Arguments:

1. Absence of motive
2. Salieri's high moral principles
3. An infectious disease raged in Vienna
4. Primitive level of medicine

Evidence:

Absence of motive

- Salieri did not envy Mozart as he himself was an ingenious musician who wrote a lot of well known musical pieces (listed).
- Salieri enjoyed social recognition (he was the imperial conductor).
- Salieri was a renowned patron of music and pedagogue.
- Salieri edited Beethoven's and Liszt's music.
- Salieri was a wealthy person (many of his works were successful, e.g., the opera *Tarare* was performed 33 times).

High moral principles

- Salieri taught students singing and musical composition free of charge and played a major role in the organization of musical life.
- Salieri had many grateful students (Beethoven, Mosheles, Czerny, Schubert, Liszt), Mozart's younger son Franz Xavier Mozart among them.
- Salieri suffered from family tragedies.
- He was tormented by the accusation of Mozart's murder.

An infectious disease

- In 1791 there was an epidemic of an infectious disease in Vienna.
- Many people with symptoms similar to Mozart's died.

Primitive level of medicine

- The treatment prescribed to Mozart was deadly because of the primitive level of medicine.
- The physician's conclusion: Mozart died of rheumatic fever.

Counterarguments:

1. There were two articles accusing Salieri in the Leipzig musical newspaper of 1825.
2. The idea for the widely known drama by Alexander Pushkin could not be totally groundless.
3. Symptoms of poisoning were present: swelling of the body, rapid demise.

Conclusion:

We managed to prove that Salieri was a person of high moral standards, who had no motivation to harm Mozart, and there was no actual evidence of his doing so, hence Salieri was not guilty.

having other participants in the discussion change their original positions and admit that Salieri could not possibly be a murderer.

The aim of this activity is to provide the participants with an opportunity to practice extended argumentation and to attempt to make other participants change their viewpoint. However, it is very important that not only the groups, but each participant can demonstrate his or her individual ability for effective argumentation, hence it is necessary to allow sufficient time for written work on a theme of the participants' choice. In our course we usually offered a list of possible themes connected to the professional fields of the participants; however, there were themes connected with marriage and family life too.

For developing teamwork skills and other special traits, including leadership qualities, the guidebook by Margaret Parkin (2001) on the use of fairy tales, stories, and metaphors (as analogies for reality) may be of great value. Below is one of the metaphors adapted by Parkin from McNeish, which imaginatively illustrates the principles of team building and theories of leadership.

We found it effective to offer this text to participants without the author's conclusions and to suggest that they formulate principles of team work on their own, taking the behavior of geese during flight as a suitable metaphor. And later, if needed, the author's conclusions can be shared.

The Russian folk tale *The Turnip* will also appear in a totally different light if we consider it in terms of effective leadership and team management. Using this traditional folk tale (where many people and animals join their efforts in trying to pull out a gigantic turnip, but do not succeed until a tiny mouse comes to help) you may invite the participants to reflect about goal setting and problem solving, about leadership and team building and gradually come to the conclusion that one should never underestimate the role of a "mouse" in a team (Parkin, 2001).

So can we now answer the questions posed at the beginning of our work on this course? Yes and no.

No doubt, there are "born leaders" who naturally possess many qualities of successful leaders, but these qualities, along with learned skills and abilities that every leader needs, are subject to

Lessons from the Geese

1. As each bird flaps its wings, it creates uplift for the bird following. By flying in a "V" formation, the whole flock adds 71 percent greater flying range than if one bird flew alone.

Lesson Learned: People who share a common direction and sense of community can get where they are going quicker and easier because they are travelling on the strength of one another.

2. Whenever a goose falls out of formation, it suddenly feels the drag and resistance of trying to fly alone and quickly gets back into formation to take advantage of the lifting power of the bird immediately in front.

Lesson Learned: If we have as much sense as geese, we will stay in formation with those who are ahead of where we want to go and be willing to accept their help as well as give ours to others.

3. When the lead goose gets tired, it rotates back into the formation and another goose flies at the point position.

Lesson Learned: It pays to take turns doing the hard tasks and sharing leadership.

4. The geese in formation honk from behind to encourage those up front to keep up their speed.

Lesson Learned: We need to make sure our honking from behind is encouraging, and not something else.

5. When a goose gets sick or wounded or shot down, two geese drop out of formation and follow it down to help and protect it. They stay with it until it is able to fly again, or dies. Then they launch out on their own, with another formation, or they catch up with their flock.

Lesson Learned: If we have as much sense as geese do, we too, will stand by each other in difficult times as well as when we are strong.

development. Teachers working at any level are able to develop leadership qualities in their students if they:

- create conditions for their students to set goals independently and achieve these goals;
- motivate them to pose questions and to voice their own opinions;
- provide feedback and encourage the ongoing exchange of ideas and an attitude of openness to other people's opinions.

Finally, we need to acknowledge that the *Effective Leadership and Management* course in its present form is a result of a hard journey full of ups and downs. We continue to work on it even now. We never know what highlights will be chosen by the next group, which component of the program will demand greater attention, and what might appear redundant. Each time the course is offered, we try to be flexible with planning, and try to respond to feedback from the participants. Most importantly, the approach we have chosen, instigating critical thinking and active learning, allows us, the course designers and facilitators to grow together with the participants.

There is an English saying, "You never know where you are with the weather." You can say the same—in the best sense of the phrase—about the RWCT approach as you never know what the final result is going to be. With each different group, some strategies turn out to be more effective and others less so. We are always ready for surprises.

The only thing you can be completely confident of is that, if your course aims to develop intellectual and communicative skills, the right choice of methods will be those promoting active learning and critical thinking. It may not be so easy—and may even be quite difficult in the beginning—but you never will regret your choice.

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Yelena Groudzinskaya is Assistant Professor at the Center of Preparation of Top Administrators in the Management and Business Department of the Nizhni Novgorod State University named after Lobachevsky. She is a certified RWCT trainer, Nizhni Novgorod, Russia.

Valeria Mariko teaches in the Center of Supplementary Professional Education in the Management and Business Department of the Nizhni Novgorod State University named after Lobachevsky. She is an RWCT certifier, Nizhni Novgorod, Russia.

Internet Usage by Arabic Language Teachers in Egypt

Samia Elbassiouny is Assistant Professor of Arabic and Islamic Curricula and Methods of Teaching at Faculty of Education Suez Canal University, Egypt, currently working at Art and Science College Abu Dhabi University, United Arab Emirates. She is also Reading & Language Specialist at Alam Semsem (the Arabic version of Sesame Street).



Photo from author's home archive.

To encourage the educational use of technology, the Egyptian Ministry of Education has begun to emphasize computer science, information networks, digital technology, and the Internet. Much has been done to provide computers for more classrooms. But Egypt, in common with much of the Arab world, still lags in the application of computing and the Internet to education.

My experiences with Egyptian teachers of Arabic have indicated to me where some of the weaknesses lie. A study I designed and administered confirmed my impressions and suggested how the obstacles to computer use might be overcome.

This article explores what Egypt has been doing over the past six years to computerize its schools and what needs to be done in the nearest future. It also suggests how the reluctance of some teachers to use computers might be addressed.

The importance of computers and the Internet in a shrinking world can hardly be overstated. The Internet has become a predominant means of knowledge

exchange worldwide. Its pervasive use makes it a defining characteristic of modern life; as a result, some have credited it with causing an *information revolution* and labeled this century the *Internet century*. There is no question that access to the Internet has had a major impact on the forms and methods of communication.

The Internet can contribute considerably to education and teaching because of its capacity to save, transfer, and connect information, and make that information easily accessible to teachers and students alike. The Internet is powerfully positioned to help teachers achieve a myriad of educational objectives across the full range of school subjects, and at all levels and types of schooling. This capacity provides compelling justification for the use of the Internet in educational contexts.

Whenever a teacher decides to use the Internet in the education process, there are many activities that can be carried out. Harris (1998) analyzed educational activities facilitated by the Internet, which contribute to the achievement of curricular goals.

The study concludes there are three main categories of Internet activities in education:

1. Communication and information exchange between individuals. This category includes a number of activities as follows:
 - Messaging by e-mail and chatting.
 - School video conferencing where a school class communicates with another class in or outside the school or even outside the state.
 - Electronic gatherings where a number of scholars and experts are invited to answer the questions of

- the students and teachers via e-mail or other means.
2. Gathering and analyzing information. This includes using the Internet and exchanging information through e-mail where the teachers and students can participate in summarizing books, reports, observations and results, and can collect, write and edit articles for publication on the Internet.
 3. Problem solving. This covers the search for information for solving a particular problem and obtaining feedback on the articles published by the students.

These categories have general application to teaching. However, the Internet offers language teachers in particular a rich array of instructional possibilities and resources to enhance their language-teaching goals. These goals (McConnell, 1998) include:

- Reading for meaning: activities ranging from elementary research, “treasure hunts,” and use of graphics-heavy pages to more advanced cultural, literary, and content-based reading.
- Listening comprehension: interacting with site that offer audio and/or video features; network videoconferencing.
- Speaking proficiency: “keyboard conversations” that lead to in-class speaking; Internet exercises involving oral repetition; audio e-mail and discussion groups.
- Writing proficiency: e-mail tasks (including online pen pals), bulletin boards, and discussion lists, and on-line portfolios (students’ web pages).
- Cultural knowledge, cross-cultural interaction: bulletin boards, topical websites, e-mail communications. More on the Internet than your library could ever afford!
- Accuracy in vocabulary and grammar: exercises and presentations on the web or local network, multi-user online games, chat rooms, and reference resources (dictionaries, verb conjugators, etc.).

Within this scope of endeavor, Egypt’s Ministry of Education in 2000 introduced information technology into 22,000 schools, including 1,267 second-

ary schools, 6,484 preparatory schools, and 14,236 elementary schools that incorporated 2,528 kindergartens. The project aimed at educating the students in the use of computers; helping them discover and develop their talents in information technology; opening new horizons through the exchange of information and knowledge with their counterparts all over the world; transforming school computer labs into social interaction centers; and using computers to promote decision-making capacity in the development of society as a whole (Abu Al Sood, 2004).

Following this, the ministry announced that “E-Education,” the ministry’s Internet server, would be available to all 7,700 preparatory schools at the beginning of the 2002/2003 academic year. Students could use this server to search for information on subjects of interest, as well as for entertainment. Such searches of entertainment sites were seen as helping to promote their understanding and general knowledge, and to strengthen their vocabulary. In addition, students could develop their self-teaching skills and identify their level of performance in any subject by consulting or completing exams at different levels. The computer program would check the answers and clarify the weak points. In promoting this resource, the ministry suggested that the system would help parents gain information about, and monitor, the educational level of their children. As part of governmental support for the project, the number of computers in the preparatory schools was increased to at least 10 per school, and all computers were linked to the Ministry’s E-Education network (see Egyptian Ministry of Education website).

The problem: Equipment alone is insufficient

“A school can have the best software ever made and access to the Web on every computer. But it won’t see much difference in student learning, experts say, unless its teachers know how to use the digital content in their classrooms” (Trotter, 1999).

What our schools really need, over and above communication through the Internet, are qualified teachers who can use the Internet effectively and help students use it in a manner that supports

their education, and develops their capacity for self-education and critical thinking. As Elbert Siegel said in 1995, "Gaining access to any technology is only the first step. Teacher training in Internet use and curriculum integration must occur hand-in-hand with the purchase of hardware and access if it is to be used successfully in schools. Teacher training is one of the most important aspects of technology implementation" (cited in: Morrison, Lowther, & De-Meulle, 1999, p. 269).

However, even though the schools are now equipped with hardware and linked to the Internet, and teachers have been provided with ministry-sponsored training programs on computers and the Internet, the actual instructional use of the Internet, either in or outside the classrooms, is very weak. Teachers of the Arabic language rarely use the Internet either in teaching or research. This is true despite the fact that e-mail service has become available in the Arabic language, that Arabic websites and Internet pages now exist, and that files in Arabic can now be transferred without suffering changes. All this is an indication of the increasing presence of the Arab world on the Internet. Recently, experts at the Institute for Advanced Studies in the United Nations University developed Universal Networking Language (UNL) (see <http://en.wikipedia.org/wiki/UNL>) which aims at enabling individuals to receive and send information in their native languages, including Arabic. The new language is supposed to remove the language barriers among educational institutions.

From my experience in teaching and supervising Arabic language students in practical training programs in the schools, I had the chance to observe that a considerable number of Arabic language teachers, particularly those most experienced, felt the computer in general and the Internet in particular were of no benefit in the subjects they taught. I conjectured this was because (a) they did not know how to access computer and Internet resources in their area of specialization; (b) they had been insufficiently trained in such use of the computer; or (c) the training courses offered to them had been inadequate or irrelevant to their needs.

Clearly, the difficulties confronting the teachers of Arabic language in using the Internet for educational purposes needed to be examined. Consequently, I designed a survey study to find answers to the following questions:

- What are the difficulties confronting the teachers of Arabic language in using the Internet as an educational tool?
- What are the incentives that may encourage the Arabic teachers to use the Internet as an educational method?

The intent of this study was to try to identify incentives that might lead to the development of proposals to encourage and support the Arabic teachers' adoption of the technology, as well as to acquaint the teacher-training officers in the Ministry of Education with the difficulties faced by the teachers that were causing them to reject these tools. The hope was that this information might help the officials organize more effective training courses and workshops that would genuinely help teachers acquire the necessary skills in using computers to realize their educational objectives.

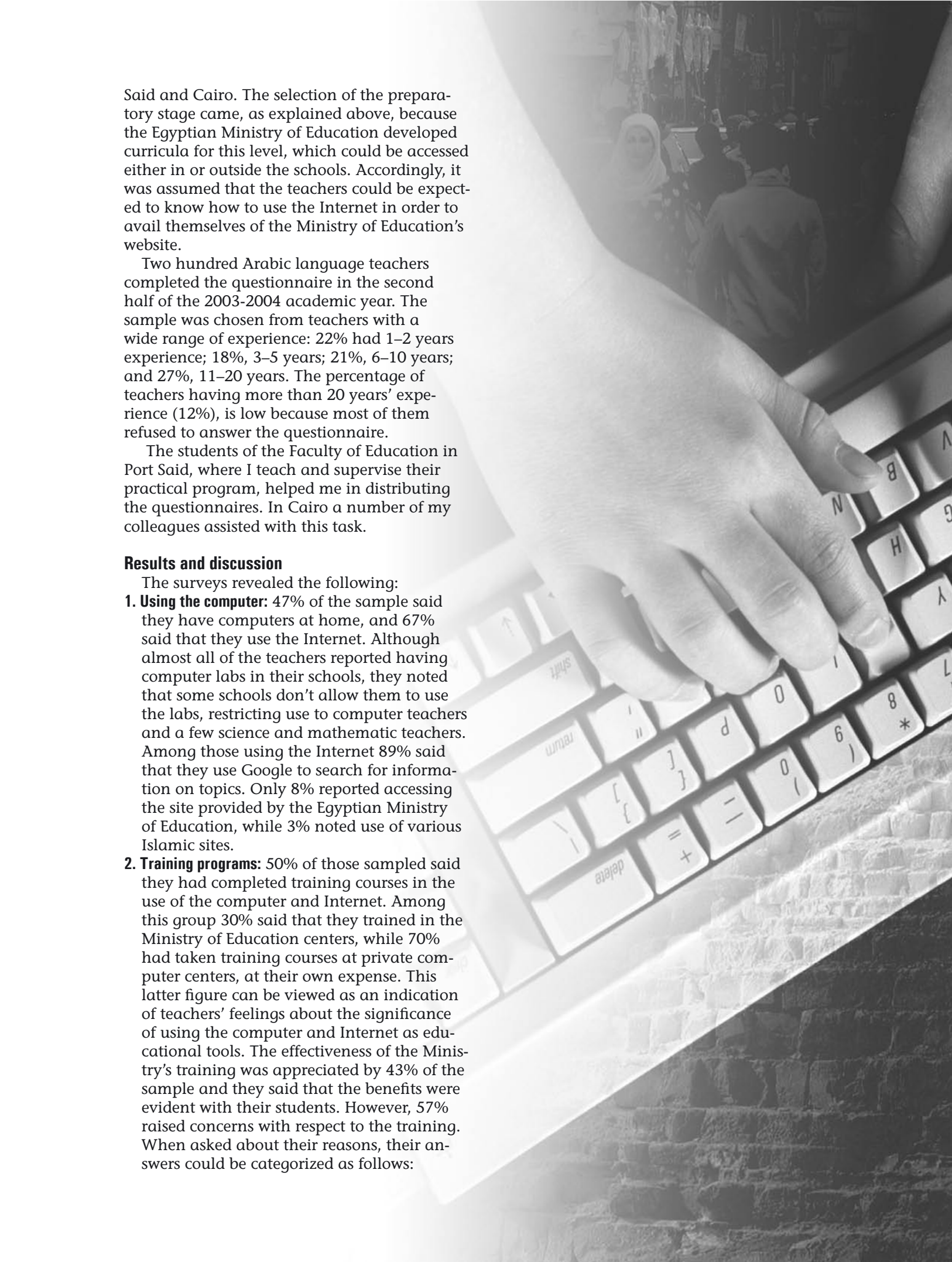
Survey instrument

After reviewing previous studies based on use of the Internet by teachers and on the difficulties in using the Internet in the classroom in Arabic countries (Al Dajani, 2001; Shehada, 2001) I prepared a 25-item questionnaire divided into four parts:

1. **Using the computer** focused on the use of the computer and Internet by teachers either in the schools, at home, or for educational or research purposes.
2. **Training programs** elicited information about the educational support they had received.
3. **Problems** focused on the obstacles that confront teachers and prevent them from using the Internet as an educational tool.
4. Investigated the **willingness** of the sample to use the Internet in teaching.

Study sample

The information presented here derives from the Arabic language teachers of the preparatory public schools at Port



Said and Cairo. The selection of the preparatory stage came, as explained above, because the Egyptian Ministry of Education developed curricula for this level, which could be accessed either in or outside the schools. Accordingly, it was assumed that the teachers could be expected to know how to use the Internet in order to avail themselves of the Ministry of Education's website.

Two hundred Arabic language teachers completed the questionnaire in the second half of the 2003-2004 academic year. The sample was chosen from teachers with a wide range of experience: 22% had 1–2 years experience; 18%, 3–5 years; 21%, 6–10 years; and 27%, 11–20 years. The percentage of teachers having more than 20 years' experience (12%), is low because most of them refused to answer the questionnaire.

The students of the Faculty of Education in Port Said, where I teach and supervise their practical program, helped me in distributing the questionnaires. In Cairo a number of my colleagues assisted with this task.

Results and discussion

The surveys revealed the following:

- 1. Using the computer:** 47% of the sample said they have computers at home, and 67% said that they use the Internet. Although almost all of the teachers reported having computer labs in their schools, they noted that some schools don't allow them to use the labs, restricting use to computer teachers and a few science and mathematic teachers. Among those using the Internet 89% said that they use Google to search for information on topics. Only 8% reported accessing the site provided by the Egyptian Ministry of Education, while 3% noted use of various Islamic sites.
- 2. Training programs:** 50% of those sampled said they had completed training courses in the use of the computer and Internet. Among this group 30% said that they trained in the Ministry of Education centers, while 70% had taken training courses at private computer centers, at their own expense. This latter figure can be viewed as an indication of teachers' feelings about the significance of using the computer and Internet as educational tools. The effectiveness of the Ministry's training was appreciated by 43% of the sample and they said that the benefits were evident with their students. However, 57% raised concerns with respect to the training. When asked about their reasons, their answers could be categorized as follows:

- 34% of the sample reported a lack of educational materials and sufficient practical training.
- 20% said the time allocated for training was insufficient, and didn't allow them to assimilate their practical training with their academic subject.
- 17% considered the trainers not to be serious.
- 14% said teachers receiving the training did not take it seriously and therefore didn't feel its benefits.
- 13% complained about lack of planning or organization in the design and delivery of the training sessions.
- 2% said the trainers were not experienced enough with the computer, which diminished the benefits of the training.

3. Problems in using the Internet and computer in the education process: Only 16% said they used the computer and Internet in teaching. The reasons for not using the computer were:

- 40% of the sample said lack of training was the main reason why they did not use the Internet in teaching.
- 18% said that they have full workloads and their heavy teaching schedules make it difficult to assume any activities outside the curricula and textbooks.
- 16% of the sample reported difficulties with the schools' network.
- 11% noted an insufficient number of computers in their schools.
- 8% reported a lack of available teaching programs.
- 5% said they didn't believe in using the computer in teaching.
- 3% said that they are not strong in the English language. This represents an obstacle to Internet use, even in Arabic sites: the English language is still needed to access information because most instructions are in English. Moreover, these Arabic sites often led to other sites in English.

When asked to prioritize the most important problems that hinder the use of the Internet and computer in the education process, the teachers responded as follows:

- 40% identified the lack of trained teachers as a major constraint.

- 20% pointed to the lack of in-service training programs.
- 15% felt the number of computers available was insufficient.
- 12% said that there was no connection between the school and the Internet.
- 7% said the school administration does not encourage them to use computers.
- 6% cited the lack of educational programs in the school.

4. Willingness of the sample to use the Internet in teaching: 31% said they are completely ready; 47% felt they needed more training; and 22% declared they were not willing to use the Internet.

Conclusion

The results clearly indicate that the main reason for limited use of the Internet in the education process is the lack of training. However, a variety of other factors will need to be addressed before the goal of capitalizing on the potential of computer technology, as both tool and resource, can be realized. The survey confirms my own observation that financial concerns—lack of affordability—are still a major reason why Egyptian teachers do not access the Internet in their homes. The most experienced teachers also tended to be those with the most resistance to the technology. Availability is clearly a problem; teachers compete with administrators for precious computer time, and there are too few computers to meet the demands. Gender roles and equity also play a part. From my discussions with teachers, I noticed that male teachers were more likely to use the Internet and to work to improve their technological skills than were female teachers. My sense is that this difference is partly explained by the heavy load on the Egyptian woman worker inside and outside the house.

Recommendations

The following recommendations are intended to support the efficient use of the Internet as an educational tool for Arabic language teachers:

1. Provision needs to be made for the development and learning of computer skills by the Arabic language students in the university. The curriculum

- should focus on practical needs and applications in the field of Arabic language teaching.
2. The training programs for teachers should be expanded and effective programs should be created for teachers of the Arabic language after determining their teaching needs and then planning in light of those needs.
 3. The schools should be supplied with computers and Internet connections, and administrative use should be minimized since it limits teacher/student access to the computers.
 4. Those responsible for promoting the educational use of Internet technology need to publicize its considerable benefits, perhaps by arranging forums and facilitating communication between teachers for the exchange of educational knowledge and experience. Teachers need to know how to communicate with their students through school web pages and e-mails, capitalizing on the fact that many students can access the Internet from their homes or in Internet cafés.
 5. Technical support should be increased by appointing supervisors to control and maintain the hardware and laboratories and to provide teachers with readily available technical expertise.
 6. Special attention should be paid to the “digital education” of students as well as teachers in how to integrate both the computer and the Internet into the curriculum. The purpose is not just to teach the teacher and student how to use the Internet, but rather how to apply the Internet in teaching different academic subjects.
 7. Teachers should be provided with manuals containing different educational and specialist sites on various topics. Provision should be made for the regular updating, circulation and exchange of these bulletins among the teachers.
 8. Practical experiences for paperless classrooms and electronic schools should be considered, and actual plans should be adopted to apply this model, e.g. the Sheikh Mohammed Bin Rashid Educational Project (www.sheikhmohammed.co.ae). There is also Stephany Sorrell’s experience with the seventh- and eighth-grade students in an isolated Kentucky school, who came from poor families of Mexican immigrant field workers. (www.paperlessclassroom.org)
 9. Cooperation among schools should be enhanced in order to encourage the exchange of experiences; the possibility of connecting all schools through one network should be explored.
 10. New sites for Arabic language learning need to be developed, as there are few such sites in comparison with the English language sites currently available.
 11. Databases in the Arabic language need to be built so that researchers can avail themselves fully of the Internet’s potential. These databases should be updated regularly.

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An “A” for Creativity: Assessing Creativity in the Classroom

Is there such a thing as “too much creativity”? Do creative students who “think outside the box” risk poor grades on traditional classroom assessments that expect students to conform to conventional ways of thinking? Are there ways of encouraging students to be creative and concurrently “on task” so that their creativity can be consistently and reliably evaluated? This article introduces a classroom creativity assessment teachers can use to help students understand task-appropriate creativity, or creativity bounded by the task.

Teachers frequently offer the encouraging words, “Be creative!” Intending to promote creativity, some teachers assign grades for it. But teachers may differ in their interpretation of creativity, and students may not understand what it means to be creative. When asked how they evaluate creativity, teachers tend to describe creative student work as “colorful,” “hands-on,” or even “going above and beyond.” Other teachers claim that assessments of creative products are too subjective to be fair, and although they may say they value creativity, teachers seldom include explicit criteria for judging creativity in their evaluation system.

Some research (Reis & Renzulli, 1991) has found that formal evaluation of students’ creative products was rare, even in programs for the gifted and talented, and that when creativity rating scales were developed locally, the criteria were often vague. Despite teachers’ encouraging words and good intentions, the omission of creativity criteria from the grading of student work may send students an implicit message that creativity is not valued (Sternberg, 2003).

Experienced teachers may be able to evaluate creativity in their subject areas without formal, criteria-based rating scales, in the same manner that experts are consistent in assessing creativity in their respective fields (Amabile, 1996; Sternberg & Lubart, 1995). Consensual assessment, or judgments made by the consensus of experts in the field, has been found to be reliable when used with direct assessments of creativity, such as of children’s stories (Hennessey & Amabile, 1988; Baer, 1994). But without specifying what constitutes creative work, teachers are missing an opportunity to teach and model creativity. Moreover, classroom teachers may not agree on what constitutes creativity, and they may unintentionally discourage creative behavior. Characteristics of creative individuals, such as impulsiveness, risk taking, non-conformity, and individualism, may pose classroom management challenges for teachers. One study (Dawson, DeAndrea, Affinito, & Westby, 1999) found teachers less likely to rate as creative those students who “made up the rules” and were emotional, compulsive, or nonconformist. There are different kinds of creative products, including those that push beyond existing paradigms and are thus not initially valued (Sternberg, 1999). Creative work that “pushes the envelope” may risk being graded as unacceptable, rather than rewarded for its creativity.

Because not everyone appreciates creativity that breaks the mold and redirects existing paradigms, Sternberg (2001) has suggested that wise individuals balance the need for change with the need for stability. Put another way, successful creators seem to know how far to push the

envelope so that their creativity is more likely to be immediately appreciated by others.

In this article, we describe and analyze children's writing using an evaluation guide we developed (*Dimensions of Creativity Scale*). The scale takes into account three different aspects of creativity: quality, originality, and synthesis. We argue that creative writing products that score highly on all three dimensions represent successful creative products. That is, these products are more likely to be valued as creative within the context of traditional classroom assessment systems. We then demonstrate how the *Dimensions of Creativity Scale* can be used to assist teachers and students in making decisions about what constitutes creativity and what forms of creativity are more likely to be accepted in particular situations.

Defining and measuring creativity

Creativity is defined here as "the potential to produce novel ideas that are task-appropriate and high in quality" (Sternberg, 2001, p. 360). In contrast to creativity that pushes beyond existing paradigms, this definition implies that creativity is bounded by context. That is, task-appropriateness sets the parameters into which the creative product must fall. In our study, for example, children were asked to write original mystery stories. The assignment required them to produce a product that demonstrated their understanding of the conventions of good mysteries (e.g., suspense, intrigue, clues, detectives, etc.). By this definition, stories that are highly original but poor mysteries are not successful creative products.

Building on this definition and previous work in evaluating creative responses (Grigorenko & Sternberg, 2001), we developed the *Dimensions of Creativity Scale* for evaluating students' creative writing. Table 1 shows the three dimensions of creativity as applied to a specific task (writing a mystery). The first dimension, which we term *task-appropriateness*, sets the parameters of the task. Applied to the task of writing a mystery, this dimension evaluates quality or the degree to which the writing product conforms to the essence of the mystery genre. The scale on this dimension ranges from "not a mystery at all" to what would traditionally be considered a "well-written mystery" that

keeps the readers' attention and builds suspense until the story's conclusion.

The second dimension, which we term *flexibility*, measures the degree to which the product differs from a particular model. Creative products are often adaptations of models provided or a synthesis of ideas (Kirton, 1994). In our work, students borrowed ideas from mysteries they read, and the most creative students combined ideas from one or more sources in unusual ways. The scale on this dimension ranges from borrowing names of popular sleuths to combining elements from different genres (e.g., fantastic animals that solve mysteries).

The third dimension, *novelty*, measures the originality of the mystery. The most creative products along this dimension pushed the boundaries of what typically constitutes a mystery, while maintaining the essence of the mystery genre. For example, one particularly unusual story involved money mysteriously appearing, rather than lost or stolen money, as one might find in a typical mystery. One way to measure this dimension is to evaluate how unusual any one student's mystery is within the class set. Unfortunately, the common classroom practice of brainstorming may lead students to write similar mystery plots. This was the case with some students in our study, but other students generated original ideas that made their mystery plots unique.

Including creativity as a learning outcome

Our study of students' creative writing was conducted within the context of a large-scale national study investigating the impact of *Teaching for Successful Intelligence (TSI)* (Sternberg & Grigorenko, 2000) in fourth-grade classrooms (Sternberg & Grigorenko, 2002). TSI is an instructional approach that integrates analytical, practical, and creative learning experiences. In this approach, besides remembering content, students are encouraged to learn new content by encoding and elaborating the content in three different ways: analytically, creatively, and practically. In language arts, for example, students analyze texts and the authors' craft, make text their own with personal, practical connections, and generate their own interpretations, original ideas, and texts.

Table 1 Dimensions of Creativity Scale

Dimension	1	2	3	4	5
Task (Quality) Is this a well-written mystery?	Not a mystery (e.g., science fiction, memoir, Bible story)	Contains some discrete elements of mystery (e.g., clues, detectives) but the mystery and/or solution is unclear)	Mystery plot but use of clues/detectives do not contribute to the solution; leaves the reader with unanswered questions	Clearly a mystery; contains characteristic elements (e.g., clues leading to a solution); easy to guess the end)	A well-written mystery that builds suspense until the end
Flexibility (Synthesis) How different is the mystery from the models? Are there unusual combinations?	Most elements the same or similar to models; almost a duplicate of the model	Some significant elements are the same or similar to the model (e.g., setting, mystery, clues)	Some elements are the same or similar (e.g., names of characters); somewhat reminiscent of the model	Ideas taken from the model are evident but the ideas are used in different ways (e.g., a sculptor's mark used as a clue in the model is changed to a symbol on a headband used as a clue)	Entirely different from the model mystery; combines elements from different models and genres
Originality (Novelty) How different is the mystery plot among others in the class set and among common mystery plots?	Common mystery plot (e.g., murder, valuable item missing or stolen) <u>and</u> others in the set have similar plots	Common mystery plot (e.g., murder, valuable item missing or stolen) <u>or</u> others in the set have similar plots	Common mystery plot, slightly embellished (e.g., something unusual is stolen); typical clue trail	Original, imaginative, unusual plot; several unusual elements or a "new twist" (e.g., money appearing, rather than disappearing)	Plot unique in the class set; completely original idea; unlike any other mystery anyone has ever read

In our fourth-grade language arts study, we developed five thematic units organized around different genres of literature and text structures (i.e., *pourquoi* or *why* tales, informative nonfiction, biography, quest literature, and mystery). Each unit culminated in a performance writing task as a direct assessment of students' understanding of the unit concepts. For example, in the mystery unit, students were required to write an original mystery that included the mystery characteristics they learned about in the unit. Creativity was a learning outcome as well as a means of demonstrating understanding of the unit concepts.

Teaching for creativity

In this article, we focus on the unit *It's a Mystery*, drawing writing samples from three teachers' classes to illustrate how we applied the Dimensions of Creativity Scale (DCS) to students' mystery stories to evaluate both their creativity and their understanding of the mystery genre. We selected three teachers who, through surveys and interviews, identified themselves as being especially interested in promoting creativity. The three teachers taught in three different public schools in the same district in the upper Midwest. All three schools had 20 to 30 percent of their students on free and

reduced-price lunch programs. In one school, African Americans were the majority population, in the other two, Caucasians were the majority. One teacher, Mrs. Williams*, had prior experience as a teacher of the gifted and was, at the time of the study, teaching in a magnet school that enrolled students by lottery. The second teacher, Mr. Peters, said he valued creative activities because they appealed to students who had difficulty with reading and traditional types of classroom tasks. The third teacher, Ms. Silvers, said that creative activities were different from her usual way of teaching. But, after implementing *It's a Mystery*, she said she planned to continue using a creative product as a culminating assessment, instead of the usual break in instruction, or "fun, down days" with which she had previously ended instructional units.

Consistent with the TSI instructional approach, *It's a Mystery* included learning experiences that targeted analytical, practical, and creative abilities. For example, students analyzed detective character traits (analytical), identified detective behaviors in people they knew (practical), created a mysterious artifact (creative), and participated in a mystery simulation, using clues to find a missing classroom artifact (analytical, practical, and creative). *It's a Mystery* is centered on the Newbery Award-winning chapter book *From the Mixed-Up Files of Mrs. Basil E. Frankweiler* (Konigsburg, first published in 1967). Briefly, the mystery describes the adventures of two siblings who stow away in the Metropolitan Museum in New York City and discover that a newly acquired sculpture is actually the work of Michelangelo. Konigsburg's mystery was read aloud by the teacher as a model for a mystery. Through instruction during the read-aloud, students learned about detective character traits, how detectives (and readers) used clues to solve mysteries, and how authors built suspense. We chose Konigsburg's mystery as the read-aloud, but any other mystery appropriate for whole-group instruction might be selected. Students were also required to select and read a mystery of their choice as independent reading.

A student workbook accompanying the unit included activities based on the read-aloud as well as students' independent reading choices. The student workbook consisted of five lessons:

1. A mystery vocabulary puzzle and identification of the independent reading;
2. Two practical activities requiring students to make text-self/world connections with detectives both in the read-aloud and in the independent reading selections, and one creative activity in which students generated similes describing detectives;
3. Two analytical activities requiring students to identify clues from both the read-aloud and independent selections, as well as one practical activity involving finding one's way around the Metropolitan Museum (the setting of Konigsburg's mystery), and one creative activity involving a simulation of the discovery and reporting of an art object;
4. One analytical activity requiring the completion of a graphic organizer showing how the clues led to the solution in both the read-aloud and independent selections, and one practical activity in which students solved problems similar to those in the read-aloud but related to their own life situations;
5. One analytical/practical/creative activity requiring students to plan their original mysteries using a story map like the one they used to analyze and identify elements of the mysteries they read during the unit.

Student workbook activities were analyzed to identify which mysteries students read independently and how students chose to use the graphic organizers to support their reading activities. For example, some students used the graphic organizers to record and analyze information from their independent reading. Others used them to organize their own ideas before writing. The student workbooks helped us keep track of what students learned from their reading and how they used ideas from their reading when developing their own stories.

* All names have been changed by the authors.

Assessing creativity

We began this article by asking whether there is such a thing as too much creativity. After all, it may be easier to be wildly imaginative than to invent new ideas within parameters. Does true creativity lie somewhere between unbridled imagination and rigid replication? If so, how do children learn to invent within parameters? With these questions in mind, we used the DCS to evaluate student writing samples. Three raters independently rated the stories on each dimension: task appropriateness, originality, and flexibility. Then ratings were discussed until agreement was reached. The purpose of rating the writing samples was to identify patterns in students' attempts to write original mysteries. That is, were some stories *too* creative because they were wildly imaginative but in no way mysterious? Were other stories good mysteries because they were mere replications of models? How many stories were at the same time highly original, flexibly adaptive, and qualitatively excellent examples of mystery?

Creative writing

Using the five-point Dimensions of Creativity Scale, we evaluated the creative writing samples (mystery stories) of 58 students: 15 in Mr. Peters's class, 21 in Mrs. Williams's class, and 22 in Ms. Silvers's class. Of the 58 stories we evaluated, only 10 scored a 3 or higher on each of the three dimensions (out of a possible maximum of 5 points per dimension). Six of these 10 "high-task, high-creativity" mysteries were from Mrs. Williams's class, and two each from Ms. Silvers's and Mr. Peters's class.

Typically, the high-task, high-creativity mysteries combined elements from mystery and other genres and were highly imaginative. In Mrs. Williams's class, for example, one mystery, *Little, Little Willie*, is a missing-dog story written in the Yorkshire dialect. In Mr. Peters's class, one mystery judged high in flexibility (5) combined fantasy and mystery in the story of a cat named Milo who searched the house for his missing feline friend, Francis. He searched everywhere, including in the toaster, oven, and microwave. He even asked the dogs, Odin and Max, who hinted that Francis was last seen writing

something. As it turns out, Francis had left Milo a note that he had gone to see his doctor (veterinarian). Originality was also in evidence in the high-task, high-creativity mysteries. For example, in Mrs. Silvers's class, most of the students wrote about something missing in the classroom, including the teacher. In this classroom set, a mystery about a shell missing from grandma's attic, and another focusing on a town where all the grown-ups had disappeared, earned relatively high scores for originality.

One story, *The Mystery of the Wizard Plants*, scored a 5 on each of the three dimensions. The story is highly task-appropriate and is clearly a mystery that keeps readers in suspense. The story recounts one of a series of murders with no "trace of a weapon or poison used." Although the detective is from "Scotland Yard," the mystery departs from the usual murder mystery as it continues with tales of mysterious plants growing throughout the city and a mysterious figure spotted among the plants. The detectives chase the mysterious man, a sorcerer with a wand, through the plants and up a castle tower. The wizard falls off the roof and the detectives find him unconscious but alive. The mystery ends when the detectives match the wizard's fingerprints to those found at the scene of the crime. The raters agreed that the combination of traditional mystery elements (e.g., Scotland Yard detectives, murder, and fingerprints) together with elements of fantasy (wizard, castle, a magic wand that grows plants) merited a high score (5) on flexibility. The mystery also received a high score (5) for originality. Whereas other mysteries in this class set focused on common missing or stolen objects, this mystery plot stood out because it focused on a series of murders. Other mysteries from this class were set in familiar places—schools, homes, and a local museum. In contrast, the wizard mystery was set in a wooded city complete with a castle. Although solving a murder is common in the mystery genre, one might expect to follow footprints or a trail of blood to solve the crime. Instead, these detectives followed a trail of mysteriously growing plants. This story is an example of a creative story that is recognizable as a mystery (task-appropriate) yet is highly original.

Among the 58 stories we evaluated, we also found 14 other mystery stories that were highly creative. These stories, however, received low scores (1 or 2) on the task-appropriateness dimension. As one example, Figure 1 shows *The Mystery of the Evil Liar*, which we rated a 1 in task appropriateness and a 5 in both flexibility and originality. The story is imaginative, highly unusual, and like no other story we read. However, the story, except for the title and the fact that a crime (or “sin”) was committed, bears no likeness to a mystery at all, and is, therefore, not task-appropriate. The idea of a crime as a mystery element might spark the imagination of a creative child and lead him or her to wonder and fabricate a story about a party in heaven whenever a criminal dies. However, the story, no matter how creative, would not likely convince a teacher that this student knows what a mystery is or how to write one.

The stories in this category are perhaps the most creative and yet may be the least appreciated as mysteries go. But, absent the mystery parameter the task sets, these stories are likely to be judged creative and enjoyable. “Grading down” these stories might give children the impression that their work is not creative or that creativity is not appreciated. The *Dimensions of Creativity Scale* can help writers understand that creative writing has more than one dimension; teachers can then work with students to help them meet the task parameters without discouraging their creativity. For example, *The Mystery of the Evil Liar* could be revised to include a mystery that the angels solve (e.g., which evil liar will die next, or who will commit the next crime?). Indeed, some teachers we worked with agreed that these highly creative stories were easier to “fix” than the stories that lacked creativity. That is, the teachers expressed a preference for helping students put task parameters on creative products rather than adding the creative dimensions to a completed task. The next category of writing samples illustrates the kind of writing products these teachers found difficult to help students improve.

The “high-task, low-creativity” stories, of which there were 10, comprised a third category. These stories scored a 4 or 5 on task appropriateness, but received a 3 or lower on the originality and flexibility

Figure 1 The Mystery of the Evil Liar

One day in heaven they threw this large party for God and Jesus. The red sin alarm came on. That means somebody is gonna die soon and they've sinned. God and Jesus gathered all the angels around the earth ball and watched the crook as he sinned. God Did something called helping out. He thought that it was the liars time to go. So the liar died. When he was waiting until judgement day, every angel looked at him crazy.

On judgment day, he got sent to hell. Every body was sad. Two weeks later, a angel stayed in heaven. When a angel stays in heaven, it's party time.

dimensions. We found these stories typically followed the models the children read in independent and class reading. For example, several stories were rewritten Nancy Drew mysteries and thus received low scores for flexibility. Originality also suffered as many writers wrote about the same plot as others in the class (something missing in school, or a missing pet).

In addition to the 10 stories in this category, 24 other stories received average or low scores on all three dimensions. Like the “high-task, low-creativity” stories, these stories also tended to have plots similar to others in the class set or to retell typical mysteries.

We believe that the DCS rubric can be used to encourage creativity and help teachers work with students to improve writing that lacks originality and flexibility. For example, students might benefit from knowing that creativity involves writing original stories that are different from those of their classmates. Many teachers encourage students to brainstorm ideas before writing. It is not surprising that children will take some of these ideas into their own writing, often with the result that many students in the class produce similar products. Teachers can encourage creativity by requiring children to generate new ideas for their own writing, or have children “claim” their ideas by listing them on the board and then prohibiting duplication. Students might also benefit from playing with unusual combinations of ideas (flexibility), such as deliberately mixing

ideas from different models they have read, taking a detective's name and/or character from one story, a setting from another, and an idea for a plot from yet another.

Conclusion

As is likely in many teachers' classes, the quality of the writing we evaluated varied from student to student. The patterns we observed (e.g., low task/high creativity; high task/low creativity) may or may not be observed among other class sets. If teachers do find that some of their students' work fits either of these patterns, we offer the *Dimensions of Creativity Scale* as one means of improving student writing. The DCS can be easily adapted to other genres of writing by adjusting the indicators of the dimensions. For example, if the task is to write a memoir, the characteristics of memoir (first-person, personal narrative) can be described in the task dimension, and the flexibility and originality dimensions can be revised accordingly to reflect how different the memoir is from others the students may have read.

Although many teachers, including those in our study, encourage creativity, students may not fully understand what constitutes creativity in given situations, and teachers may not know exactly how to evaluate creative products. Especially in a testing situation, it may be beneficial to help students understand task-appropriate creativity. It may also be beneficial to help students understand just what creativity is and how to be creative (e.g., how to combine ideas and how to push for one more idea that no one else has generated). Our experience has convinced us that creativity can be bolstered by a practical sense of what is appropriate for the task at hand, as well as an analysis of just what constitutes creativity.

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Judi Randi teaches in the Education Department at the University of New Haven, West Haven, CT, USA.

Linda Jarvin is Associate Research Professor in the Department of Education at Tufts University, MA, USA.

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A Covenant For Honoring Children



For generations of North American children who were raised singing his songs, Raffi Cavoukian will always be known simply and affectionately as “Raffi.” Born in Cairo of Armenian parents, he spent his early years in Egypt before emigrating with his family to Canada, where he lives today. A beloved and best-selling children’s entertainer, he has consistently refused all commercial endorsement offers. Leading by example, he has taken a passionate and public stand against the exploitation of children through direct advertising and marketing. Recently his focus has shifted from singing to, for, and with children to advocating on their behalf. Alarmed by what he views as increasingly ‘toxic’ environmental and cultural conditions that are most detrimental to the most vulnerable – children – he was moved to write A Covenant for Honoring Children. This visionary statement of fundamental principles is based on the disarmingly simple proposition that if we were to give first priority to the needs of our children, we

would go a long way toward creating societies that would better sustain and benefit us all.

Describing the Covenant as “a global credo” and “a novel idea,” Raffi offers it as a set of organizational guidelines that “calls for a profound redesign of every sphere of society.” The call is urgent, hopeful, ambitious:

At this critical point in the history of humankind, the irreducible needs of all children (no matter where they live) can offer a unifying ethic by which the cultures of our interdependent world might reorder their priorities.

Principles, no matter how admirable, mean little unless transformed into action. Action is more likely if one has allies. To this end, Raffi has worked tirelessly to publicize and promote his vision, and to speak out about the trends, policies, marketing practices, media manipulation and political decisions and omissions that directly impact children. One of his initiatives has been to work with beginning teachers. The article that follows the Covenant describes how student teachers at one university responded to his challenge to translate the vision into action... into their work with children.

For more information about Raffi see www.raffinews.com

Alison Preece



We find these joys to be self evident: That all children are created whole, endowed with innate intelligence, with dignity and wonder, worthy of respect. The embodiment of life, liberty and happiness, children are original blessings, here to learn their own song. Every girl and boy is entitled to love, to dream and belong to a loving “village.” And to pursue a life of purpose.

We affirm our duty to nourish and nurture the young, to honor their

caring ideals as the heart of being human. To recognize the early years as the foundation of life, and to cherish the contribution of young children to human evolution.

We commit ourselves to peaceful ways and vow to keep from harm or neglect these, our most vulnerable citizens. As guardians of their prosperity we honor the bountiful Earth whose diversity sustains us. Thus we pledge our love for generations to come.

Child honoring principles

The words of A Covenant for Honoring Children suggest nine guiding principles for living. Taken together, they offer a holistic way of restoring natural and human communities, thus brightening the outlook for the world we share. They form the basis for a multi-faith consensus on societal renewal.

Respectful love

is key. It speaks to the need to respect children as whole people and to encourage them to know their own voices. Children need the kind of love that sees them as legitimate beings, persons in their own right. Respectful love instills self-worth; it's the prime nutrient in human development. Children need this not only from parents and caregivers, but from the whole community.

Diversity

is about abundance: of human dreams, intelligences, cultures, and cosmologies; of earthly splendors and ecosystems. Introducing children to biodiversity and human diversity at an early age builds on their innate curiosity. There's a world of natural wonders to discover, and a wealth of cultures, of ways to be human. Comforted by how much we share, we're able to delight in our differences.

Caring community

refers to the "village" it takes to raise a child. The community can positively affect the lives of its children. Child-friendly shopkeepers, family resource centers, green schoolyards, bicycle lanes, and pesticide-free parks are some of the ways a community can support its young.

Conscious parenting

can be taught from an early age; it begins with empathy for newborns. Elementary and secondary schools could teach nurturant parenting (neither permissive nor oppressive) and provide insight into the child-rearing process. Such knowledge helps to deter teen pregnancies and unwanted children. Emotionally aware parents are much less likely to perpetuate abuse or neglect.

Emotional intelligence

sums up what early life is about: a time for exploring emotions in a safe setting,

learning about feelings and how to express them. Those who feel loved are most able to learn and to show compassion for others. Emotional management builds character and is more important to later success than IQ. Cooperation, play, and creativity all foster the "EQ" needed for a joyful life.

Nonviolence

is central to emotional maturity, to family relations, to community values, and to the character of societies that aspire to live in peace. It means more than the absence of aggression; it means living with compassion. Regarding children, it means no corporal punishment, no humiliation, no coercion. "First do no harm," the physicians' oath, must now apply to all our relations; it can become a mantra for our times. A culture of peace begins in a nonviolent heart, and a loving home.

Safe environments

foster a child's feeling of security and belonging. The very young need protection from the toxic influences that permeate modern life—from domestic neglect and maltreatment, to the corporate manipulations of their minds, to the poisonous chemicals entering their bodies. The first years are when children are most impressionable and vulnerable; they need safeguarding.

Sustainability

refers not merely to conservation of resources, renewable energy development, and anti-pollution laws. To be sustainable, societies need to build social capacity by investing in their young citizens, harnessing the productive power of a contented heart. The loving potential of every young child is a potent source for good in the world.

Ethical commerce

is fundamental to a child-honoring world. It includes a revolution in the design, manufacture and sale of goods; corporate reform; "triple bottom line" business; full-cost accounting; tax and subsidy shifts; political and economic cycles that reward long-term thinking. Ethical commerce would enable a restorative economy devoted to the well being of the very young.



Curriculum Conversations: Developing a Child-Honoring Pedagogy with Pre-Service Teachers

Towards ecological health and well-being

Raffi Cavoukian's vision for child honoring is embedded in an eco-centric worldview that assumes interconnectivity between all parts of the earth's biological and social networks (Cavoukian & Olfman, 2006). Since Rachel Carson's pivotal book *Silent Spring* (1962), experts have become increasingly concerned by the deterioration of our environment, our social systems, and their dynamic relationship with each other. Human misuse and over-consumption tied to globalization are posited as major influences to environmental and social health (O'Sullivan, 2003). While definitions of health may be varied and widely debated, it is increasingly clear that an understanding of these complex relationships is essential to our very survival (Capra, 1982; Union of Concerned Scientists, 1992).

This urgent and critical endeavor calls for teachers to develop curriculum that is both transformed and transforming—curriculum grounded in the integrated concepts of ecological literacy, as suggested by environmentalist David Orr (in Stone & Barlow, 2005). This effort is embedded in a requirement for radical social change—in order to think relationally, we must leave behind old habits and ways of being in our international community, local communities, and schools. In the process of transforming curriculum toward the inclusion of ecological understandings, it is essential that teachers develop a critical awareness embedded in the living experience of teaching praxis—the place where theory and practice meet and interact (Carr & Kemmis, 1986).

In our schools, methods and attitudes towards teaching and learning must expand beyond the prevalent content-driven and reductionist approaches that focus on “accountability” as the primary measurement of success. This banking model of education (Freire, 1970) views teachers as knowledge brokers, students as receptacles, and curriculum as the content that is transferred in their interactions. It is increasingly clear that curriculum must be seen as more than this. It must become a fluid and changing conversation between teachers, learners, and community members, based in a critical/theoretical dialogue (Pinar, 2004) that reflects a relational, integrative, and global ecological awareness.

Individual teachers play a crucial role in the implementation of curriculum that is relational and alive (Aoki, 2005; van Manen, 1986). But how do teachers develop their ability to think critically about curriculum in an ecologically literate way? In his book on language learning, *Curriculum as Conversation*, Arthur Applebee (1996) discusses the importance of dialogue within the curriculum:

...curricula can be thought about as culturally significant domains for conversation, and teaching and learning as the processes through which students become participants in those conversations. Such participation is a necessary step in transforming knowledge-out-of-context into knowledge-in-action. Through such conversations, students will learn not only the content that is important within each domain, but also the ways of thinking and doing that give the content life and vitality. They will learn to do science, for example, not just learn about its history and accomplishments; they will learn to solve problems and take action on their own. (p. 126–127, italics added)

The university-level course described in this paper is an example of a “domain for conversation” that encourages pre-service teachers who are studying to become qualified educators, to participate in dialogue with each other, their instructors, and the community about ecological literacy and its place in school curriculum.

The community development project course

Toward the aim of encouraging conversation with students about issues of ecological importance, my colleague Dr. Ted Riecken and I began to integrate the child-honoring principles into an existing teacher-education course offered to final-year students at the University of Victoria. Working in small groups with an instructor mentor, students were given an assignment to design and implement a school-based community development project, tied to at least one of the child-honoring principles that reflected the philosophy and themes of community action and positive social change.

Because the enrolled student teachers had recently completed their final field placements, the course was framed as the first of many professional development opportunities they would encounter as they moved from student life into their teaching careers. The expectation was that the student teachers would be self-directed and professional as they developed and implemented their community projects. This served to reinforce the notion of the “death of the professor” that Paolo Freire suggests is necessary for adult learning to occur (in Vella, 2002). Within this model, my role is more about being a facilitator or co-researcher than being an instructor. The descriptions in this paper are based on the curricular changes developed in the course over the past two years.

I have identified four critical elements that appear to help these emerging teachers productively engage in conversations about the theory behind their curricular decisions. First, pre-service teachers must have a clear sense of their personal identity as educators—an awareness of how they situate themselves pedagogically, socially, emotionally and spiritually. Second, pre-service teachers need to expand their reflective practices to encompass an understanding of “the big picture”—increasing their knowledge about systemic ways

of looking at, exploring, and appreciating the world as an intricate system that demands social and environmental balance. Third, teachers need a lens through which to direct their educational inquiry so that they can be focused and productive. Fourth, pre-service teachers must have a place where conversations about curriculum development can be nurtured and expanded.

In this course, the students are encouraged to re-search themselves as educators through reflective practices. They are introduced to the principles of child honoring to ground their curricular conversation in a framework that allows crucial questions to be asked about ecological well-being. They are required to develop a community project while engaging in critical conversation about its curricular content and objectives. Space is given, in the form of dialogue, for the teachers to explore and expand on their personal understandings, desires, and goals for their future classrooms. Through this integrative approach, pre-service teachers can develop eco-centric understandings through a knowledge-in-action approach, as they deeply explore how their project is intertwined with larger social and environmental issues.

Re-searching roles: Collage and musical memories

On the first day of the course, the pre-service teachers were specifically asked to step outside of their personal assumptions about learning and teaching—assumptions that may have formed in their recent practicum experiences, or from their previous twenty-odd years as participant observers in the educational system. At least for a moment, the goal was for these young professionals to leave the familiar environment of the university to connect with their own underlying or unconscious perspectives. They were being asked, as emergent educators, to re-search their own sense of identity and integrity amid the whirlwind of teacher-education courses, practicum placements and job searches (Palmer, 1998).

To reinforce this alternative perspective, the first course assignment was to make an individual collage out of images cut from random magazines, which represented the students’ perceptions of themselves as teachers (Greene, Magliaro,

O'Conner & Daily, 2006). The sharing of these collages involved lots of tears and laughter—the affective and personal connections made by the students in this “teacher-honoring” activity appeared to be a powerful tool in fostering reflection on the formation of a child-honoring perspective. The second time the course was offered, the collage assignment was revised, and the students were asked to represent themselves not only as teachers, but learners and researchers as well. By expanding the definition of identity in this way, we acknowledged the multiple roles that we take on as educators. From this place of heightened personal awareness, the students were able to begin formulating community projects that were clearly meaningful to them. Interestingly, this countered the urgent questions I had received on the first day of the course on “what do I need to do to get an ‘A.’”

A second process of reflection “outside-the-box” stemmed from the students’ personal memories of listening to Raffi’s music as young children. They fondly recollected singing songs like, “Baby Beluga” and “All I Really Need” (Raffi, 1980) with friends, family, and school-mates. Raffi’s music describes in simple, accessible, and eloquent ways the important relationships and basic requirements for the health and wellness of young children and our global environment. The students’ affective connection to Raffi’s musical message appeared to motivate them to think carefully about the goals, design, and implementation of their projects in ways that reflected the child-honoring philosophy. Combined with the representational collages, this connection was a powerful start to their coursework.

Expanding reflective practices: Learning logs and Leonardo books

The first year the course was taught, the students were required to keep regular learning logs in which they wrote about their experiences in the course. The intent was for the students to reflect critically on what they were doing with their projects, how things were progressing, and how the group was interacting, as well as to monitor and develop their sense of inner direction and purpose. Unfortunately, by that point in their student-teaching careers, they felt they had been “journalled

to death” by similar assignments in other classes.

As an instructor, I was unwilling to let go of the richness of reflection (Hoffman-Kipp, Artiles & Lopez, 2003; Schon, 1983; Sharp, 2003), yet I was torn, knowing that rote reflection might be counterproductive to the course goals. Although it was uncomfortable, the requirement was kept and students were expected to write for 15 minutes on a prompt that was given at the beginning of each class. These prompts emerged from the ongoing class dialogue and were designed to coincide with the stages of their project development. Journal entries were shared with me regularly so that a responsive dialogue could be pursued. This procedure appeared to be successful for some of the students, who later reported that it was a relevant assignment, but others still felt annoyed and completed the assignment grudgingly. By the end of the term, the students’ reflective process still had a tendency to resemble mechanical accounts of their step-by-step processes. However, some students were beginning to describe more deeply the nuances of the curricular decisions that they were making—as well as their rationale.

During the second offering of the course, I made two significant changes in the reflection process. First, I began consciously and explicitly to model my own reflective processes to the students (Loughran, 1996). By thinking aloud, I was able to articulate that I was having mixed feelings about the reflective assignments and was unsure what would be most beneficial to the students in this area. As a group, we discussed being uncomfortable with the uncertainty of this process, and I modeled those same feelings in myself.

The second change involved the introduction of a different style of reflective journaling. I explained to the students that there had been a tendency for formulaic reflection in the learning logs from the previous year, and I asked them to help me rethink the reflective process for the course. Their assignment was to keep a *Leonardo Book*—a journal that was open to multiple creative processes as DaVinci was in his sketchbooks (Gelb, 2004). I wanted them to explore the question, “What reflective practices make sense and are useful to you as a teacher?” I opened up the assignment to include whatever reflective practices they chose, providing

they spent their reflective time on the topic or process of their community projects.

Many students incorporated elements of collage, drawing, and poetry into their Leonardo Book reflections. Their writings were less formulaic and were more exploratory. They posed questions to themselves about their projects, and later returned to those questions to add thoughts on how their fieldwork—their knowledge-in-action—might further inform their inquiry. Overall, there was feedback that these reflective assignments were helpful to their professional development, although some still did not see reflection as a worthwhile activity.

The question of how best to ask pre-service teachers to engage in reflective processes needs additional and more rigorous study. My goal as instructor is toward a method that is increasingly perceived to be relevant by the students. In the context of this course, relevant reflection builds on the student's knowledge-in-action and leads to increased motivation and engagement in informed curricular discussions and decisions.

In addition, it will be fruitful to explore the possibilities of peer interactions within the reflective process. This could be done through a rotating journal in which each individual in a project group takes turns writing. Each student would be required to read the previous entry and respond in a way that furthers the conversation on the group project. This roundtable approach promises to expand reflection through increasingly complex conversation that is relevant to the project and accountable to the needs of the student group. Additionally, my voice as an instructor could also join the group conversation in this way.

Group dialogue as curriculum conversations

When the child-honoring principles were first introduced, the students could immediately appreciate their importance, but some found them to be lofty or elusive. A few saw them as being too “fluffy,” while others were overwhelmed by the all-encompassing nature of the principles and couldn't decide or imagine what project would be a good starting point for them. This response might be at least partly attributed to the challenges of looking at curriculum relationally when

a content focus is more familiar. These concerns became a primary focus of our group conversations. Additionally, as the students began to identify their personal interests through the collage assignment, they could begin to attach their ideas to one or more of the principles. This knowledge-in-action informed the group discussions as we revisited questions on key issues throughout the course.

As the students formed groups and began to develop their community project ideas, I frequently reminded them that the process was a murky one for many reasons: group work is complex, finding a topic that really holds your interest can take a while, and systems thinking is not as clear-cut as a content-driven approach. I asked them to have patience with their feelings of discomfort and the experience of not knowing what was the “right” way to do their project. In the end, students exceeded both my and their own expectations and began to formulate projects that were strongly connected to topics of personal interest. This in turn, bolstered each student's ability to inquire more deeply through a meaningful process of reflection (Oberg, 2004).

As instructor, I focused heavily on facilitating, during regular class meetings, the inclusion of thought-provoking conversation that always asked the students to tie theoretical ideas to practical application, and vice versa. By engaging in conversation about how their ideas were tied to the principles and how they might look in practice, the students began to move among the roles of teacher/researcher/student in fluid and productive ways. This was reflected in the thoughtfulness and depth of the projects. Increasingly, the students were able to tie their projects clearly to the eco-centric framework and steer away from the stasis of a content-based focus. This occurred because they were engaged in a “knowledge-as-action” community of practice that explored solutions to real curricular dilemmas through conversations that continuously attempted to bridge theory and practice (Buysse, Sparkman & Wesley, 2003). The group discussions, which first began as a forum for reporting, changed into more open-ended conversations that furthered thoughts and ideas about how to implement the child-honoring principles.

Examples of knowledge-in-action: The community projects

The projects developed by the students were multifaceted and adaptable to numerous educational situations and grade levels. The content spanned diverse topics, including knitting, recycling, home reading, nutrition, disability awareness, goal setting, teacher motivation, artistic expressions of the child-honoring principles, cultural awareness, and systematic audits of local communities to assess the degree to which they were, or were not, places that “honored” children.

A requirement that the project topic relate to a personal student interest encouraged projects that the student teachers could and would use in future classrooms. Some students augmented projects that were already in existence, while most drew from ideas that had been bubbling away somewhere unconsciously or from specific personal experiences. Most of the students left the course with the intent and passion to use the project in their own classrooms, as well as a theoretical sense of relevant project-specific issues. I pointedly encouraged the students not to make unit plans, and to focus instead on the praxis of their broader topics. In fact, both lesson and unit plans emerged, but I insisted that at this point they be secondary to a theoretical understanding of their projects.

The following projects are not to be used as models of curricular content, but as examples of ways that child honoring can be brought to life through a dynamic curricular approach involving personal understanding and development, community building, environmental awareness and exploration, and audits and assessment of existing issues and situations.

Goal setting (personal understanding and development)

This was an ambitious project that took a theoretical look at some of the underlying issues of personal motivation and emotional growth. The group informed themselves through the hands-on experience of a long-term goal-setting exercise, discussion, and extensive reading. They concluded that developing goal achievement strategies was crucial to nurturing healthy individuals who can then be productive community citizens. The group devel-

oped curriculum activities and ideas for primary, intermediate, high school, and adult learners. The project was tied to the child-honoring principles of respectful love, emotional intelligence, diversity, and caring community.

Nutrition audit (assessment of existing issues and situations)

This group examined food and nutrition habits in four local high schools. The team gathered information through observations of students at lunch, an assessment of existing free lunch programs, assessment of vending machines, and interviews with students, teachers, and administrators. Through our group discussions and their fieldwork, they began to understand some of the political and financial issues behind nutritional decisions (e.g., what the vending machine gets stocked with and why), and to make practical connections between students’ nutrition and school enrollment, absenteeism, and completion. In the end, they suggested that changes needed to happen on a systemic level with the whole school district in order to be successful. This project was related to the child-honoring principles of safe environments and ethical commerce.

Cross-cultural knitting (community building)

First Nations and non-First Nations Elders provided extracurricular knitting lessons and a relaxed atmosphere for middle-school youth to keep their hands busy while getting to know students from other cultures. The program was planned to be a regular event throughout the year, so that conversation and community could develop between the participants. Story telling and cultural sharing by the Elders was encouraged. The participants joined together individually knitted squares to create a blanket that was presented to someone chosen by the group. The first blanket was delivered to a new mother at a local shelter. In our group meetings, we discussed definitions of culture, the role of classroom community in ecological health, and the importance of the notion of sustainability in developing social relationships. The students connected this project to the child-honoring principles of respectful love, diversity, safe environment, and emotional intelligence.

Community connections (environmental awareness and exploration)

A group of young adults with intellectual and physical disabilities from a local community center joined elementary school children on adventure walks through their neighborhood to explore who lived in their shared community. An emphasis was placed on the relationships between animals and humans, and how we co-inhabit the same environment. Together they made a three-dimensional artistic model of their community and its residents. A relationship developed between the two groups that continued with visits throughout the year. The child-honoring principles addressed were caring community, diversity, sustainability, and non-violence.

Caring children carrying salmon (environmental awareness and exploration)

This project stemmed from the lifelong interests of one student who was a catch-and-release fisherman. He developed a program that “rescued” the small salmon fry in a local stream by transporting them to safety from pools that were destined to dry up in the changing seasons. After discussing the ecological implications with a park ranger, he brought students to the stream to catch and release the fry into more life-sustaining waters. He then produced a resource video that highlights the connection to the child-honoring principles of conscious parenting and sustainability.

Concluding remarks

In working within a pedagogical structure that values conversations about curriculum, young teachers develop a sense of agency—and see themselves as having a role in recasting the world in ways that increase the health and wellness of children and our global environment. By drawing on reflections and conversations about their knowledge-in-action experiences, these pre-service teachers were able to shift their curricular perspectives from a more content-driven approach to thinking about content in conjunction with an eco-centric and relational curriculum. Through this process, the emerging teachers developed a sense of “hope in action” (Generett & Hicks, 2004), giving them a vision of how their future classrooms might connect to the child-

honoring principles in heartfelt, significant, and practical ways.

Over both sessions of the course, there was an unusual amount of commitment by the students towards their projects. Many groups opted to continue projects past the end of the term, and many individuals had plans to adapt their projects in their new and future classrooms. This enthusiasm could be attributed to the depth of the students’ personal connection with their chosen topics. Additionally, looking through the lens of child honoring required that the projects be socially and ecologically relevant. The conversations between members of the groups, across the various groups, between the groups and instructor mentors, and with community members kept the curriculum alive and fluid, while informing and strengthening the various projects.

It would be useful to develop a long-term study that follows how the principles of child honoring and the use of focused curriculum conversations carry over into the implementation of curriculum in future classrooms of these pre-service teachers. The challenges of being a new teacher are many, and altering teacher perceptions of learning and teaching is difficult (Maynard, 2001). It would be most effective for this action-oriented research work to occur within educational settings so that classroom practice can inform theory (Zeichner, 2001).

Feedback from the students suggests that it would be helpful to incorporate the framework of child honoring into the curriculum at an earlier stage of the teacher-education program. One way of partly addressing this concern is to provide more thorough exploration and description of the child-honoring principles at the beginning of the course. For example, in the second year I incorporated a brainstorming activity designed to help the students think of practical applications for the principles. Next year, this will be expanded into a lengthier discussion of the specific ideas raised.

Teachers can and do make a difference in furthering the fundamental and urgent goals that are proposed by the child-honoring principles. As pre-service teachers clarify their roles and identities as educators, they develop confidence, increase engagement, and acquire a sense of

relevancy toward their curricular decisions. By expanding their reflective practice to include the lens of an eco-centric viewpoint, they begin to understand the relational connections between the content of their curriculum and larger social and ecological issues. Supporting dialogic spaces that are conducive to reflecting on knowledge-in-action leads to theoretical conversations about curriculum that are informed by the everyday realities of practice. In turn, these conversations strengthen curricular decisions involving ecological literacy.

I am confident that each of the young teachers who have been involved in the community project course will continue to critically explore issues that are relevant both to their personal interests and to the health of their students. As they move into their teaching careers, their future conversations about curriculum development with other educators are sure to be robust, dynamic, and informative, leading to the increased health and wellness of children within our complex, fragile, and sustainable global environment.

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Michele Tanaka is a doctoral student in the Department of Curriculum and Instruction at the University of Victoria. An educator for over 25 years, her research interests include pre-service teacher development, learning and teaching in cross-cultural settings, community-based participatory research, and Aboriginal education.



Teachers, Classrooms, and Change

They Are All Our Children

David Klooster and Patricia Bloem

In our small town we sometimes hear people say, “Our schools do a fine job with our own children, but those new children are creating problems.” The “new children” sometimes speak a different language (Spanish or Vietnamese or Laotian are increasingly common here) or they may have moved to our town from bigger cities. Those “new children” are accused of bringing down test scores for the schools or causing discipline problems or using too many resources. “Our children” and “those new children.”

The comments we are hearing in our small community are not unique; they are as old as history. We’ve heard similar complaints in every place we’ve lived and visited. In Slovakia and the Czech Republic similar complaints are directed against the children of Roma communities. In the Netherlands, the traditionally tolerant Dutch are facing new questions about the place of Muslim children in their schools. The issue in France was symbolized by the head scarves worn by Muslim girls. In the southern Austrian community where we lived last year, the question focused on the Slovenian linguistic and cultural minority population and their rights in the schools and in the society to use their mother tongue. In some Eastern European countries, questions have been raised about responsibilities of newly liberated countries

to the Russian-speaking children of their former colonial occupiers. In many of these examples, issues of language are central, but there are also overtones of racial and cultural difference and of economic disparity. Around the world people are migrating, emigrating, immigrating, and sending their children to school to sit side by side with children of very different family histories and cultures.

Meanwhile our journals are urging teachers to find solutions, and this journal is no exception. For example, in a recent issue, Bette Goldstone recited a list of educational inequities and prejudicial treatment of various ethnic groups from around the globe (Goldstone, 2006). Sanford and Hopper, in telling us about the Global Arts Project, documented a marvelous attempt to help students “transcend boundaries . . . to see differently, hear the voices of others, connect with the lives of others with different experiences, and collaboratively shape a new vision of the world” (Sanford & Hopper, 2006). Whether they are helping us identify the problem or explore possible solutions, researchers and scholars are working to help us see the reality of unequal educational practices in our schools.

Part of the problem, no doubt, is the universal human suspicion of the unknown and the preference for the familiar. The 37th Annual Phi Delta Kappan Poll of Public Attitude toward the Public Schools (Rose, Gallup, Welbrun, Hess, et

al., 2005) showed that Americans believe the schools in their own communities are far better than the nation’s schools in general, and that the people have “a low opinion of the nation’s schools and a high opinion of schools in the local community” (p.42). It seems people tend to think well of the schools where their own children go, but they are suspicious of the schools where the students and teachers are not familiar.

Although each community may feel its own struggle with tolerance is unique, what we hear from members of our community is fundamentally similar to what our colleagues in other countries face as well. Ours is a world of migration, travel, global commerce, and shifting borders, and our local communities will never be as homogeneous as they once were. We all face a common challenge: to create spaces and lessons that are open to all, in which the “new kids” have the chance to gain the skills and knowledge they need to be effective participants in their new culture, and in which the “old kids” and their parents can learn about the newcomers and their culture. When we believe that some of the children are outsiders who aren’t fitting into “our” schools, then it is easier to think that they are someone else’s problem, and we take less ownership in their education and well-being. We take less time to figure them out, to understand them as human beings and as learners. By contrast, we tell our pre-service



teachers over and over: You must teach *all* the students. Not just the exceptionally bright ones. Not just the ones who fit in. Not just the ones originally from this place.

Of course, we are asking these teachers and our schools to do what the rest of the society is slow, reluctant, or unable to do. Schools are asked to promote change and solve problems that most of the rest of the society seems unwilling to address. The court-ordered school desegregation programs in the United States in the 1960s and 1970s, in which black students and white students were bused across cities to achieve racial balance in the schools, were a large-scale social engineering attempt to achieve educational equality. These programs were less than fully successful because the government was asking schools and school children to do what the rest of society was unwilling to do. In our view, the current challenges schools face in providing equal education to all school children are more easily solved, because so many of the elements of our societies have already adopted the view that diversity is a desirable feature of healthy culture. Now, schools and teachers must find the concrete methods to achieve greater equality in the classroom.

How can schools and teachers practice the belief that all children, regardless of language or background, deserve the best education we can provide? We have four suggestions, and we invite you to post your own additions

to the *Thinking Classroom* website forums at www.rwct.net or send them to the journal address thinkingclassroom@ct-net.net so that we can discuss them together:

1. We need to think differently about difference. Instead of thinking of our classrooms as sets of students who embody a culture, we need to concentrate on how cultures shift and take new shapes, how they are not set in stone. Instead of thinking of our students as embodiments of a culture, we need to see them as young, pliable human beings, complex mixes of experiences, ready to grow and be shaped by school friends and a good curriculum. They are human beings who may be ready to resist the ways the world has pigeonholed them, and who are far more complex than one label would allow. In this way, we will learn over time to see them not as “those children” but as “our children.”
2. We need to think differently about similarity. Too often we trivialize our differences in the rush to state stereotypical similarities. If we look only for superficial similarities and gloss over the differences in world view between cultural groups, we risk trivializing the very real differences among groups, and we miss an opportunity to learn new ways of seeing and thinking about the world. To the extent that we are able to honor

the important differences and to see beyond the superficial similarities, we will make our classrooms and our schools lively multicultural laboratories where all of our children and their home communities can yield up their histories, customs, pleasures, and problems for our shared inquiry.

3. We need to provide students with significant exposure to perspectives we do not innately understand. Carefully chosen literature can help provide this perspective, but there are myriad ways teachers can help students develop insight into a variety of world views. Here is where we have so much to learn from fellow educators, and from peacemakers who have gone before us. We can learn from lofty experiments, such as the Peace University in Wales, set up by a United Nations charter, where students come from around the world to listen to each other and learn about each others' ways. We can learn from the Dutch primary teacher whom Pat observed last month, a teacher of 23 Muslim and Christian kids, a dedicated man who absolutely insists that his 12-year-old students can learn from each other, can learn to co-exist and even to thrive, without fighting. And we can learn from the example of Neve Shalom (in Hebrew) Wahat Al-Salam (in Arabic)—both names mean “Oasis of Peace”—the village just halfway between

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Jerusalem and Tel Aviv that puts Israeli and Palestinian kids into a bilingual and bicultural community and school. Some of the spirit of that special place is captured in a poem about a freak, unexpected snowfall in Jerusalem in 2000. Poet Naomi Shihab Nye cites a newspaper heading that “Palestinians and Israelis Worked Together in the West Bank to Rescue...” and calls it, *a sweeter sentence than baklava than all the oranges of Jericho offered up to God!*

(Nye, 2002, p. 128)

4. We need to help our students engage in civil discourse and deliberation. As Walter Parker has argued (2003), schools need to create classroom and school-wide projects in which students work together to solve genuine problems in their lives. This deliberation, according to Parker, is part of the best democratic practices of problem solving, consensus building, and direct action, in which the good of the community is put ahead of the needs of the individual. Different ideas, perspectives, and life experiences are necessary for this work; the result of the process will be stronger and richer if members of the group come from different backgrounds and bring different abilities to the work. When groups deliberate, difference is desirable, not an obstacle. Deliberative projects that prod individuals from the outsiders’ group and from the

insiders’ camp to work together on meaningful projects can be invaluable for the feeling of and the reality of cohesion.

If our communities are to face racial and ethnic tensions with any degree of grace, the schools must bear a central responsibility in creating bridges of understanding and relationships between the traditional members of a community and the newcomers. But even with lots of critical thinking and critical exposure to others’ perspectives and the use of deliberation, the differences can feel insurmountable. In our last column, we wrote about the very real contexts of limitations, challenges, and resistance. The problems involved are complex, and it will take more than good intentions to make schools be the beacon of light in our divided societies. We need to believe and to act on the reality that our communities and nations are today—and always will be—more varied, more multicultural, more multilingual than they once were. As was true in previous times in our histories, the sooner our communities can say “these are all our children,” the sooner we will be on a path to healthier schools. Each teacher does this in her own classroom at the beginning of the year, when she looks out over the 20 or 30 students who have been gathered by historical, political, and economic forces far beyond the teacher’s control, and says to herself, “These are all my children, these are all

my students.” Perhaps when we start behaving as though we are one unit, one diverse whole with various strands within, we can embrace all of our children and claim them all as learners and productive members of our societies.

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David Klooster and Patricia Bloem are partners in teaching, writing, and living. David is Professor and Chair, Department of English, Hope College, Holland, Michigan. Patricia is Associate Professor of English education, Grand Valley State University, Allendale, Michigan. They welcome your responses (at the website forums at www.rwct.net or you may write to thinkingclassroom@ct-net.net).

Letter to the Editor



The Creative Laboratory Experiences of Mathematics Teachers: Problems and Solutions

Tatiana Vvedenskaya

A modern lesson . . .

It's almost a set expression. At least I've heard it quite often during my many years working in schools. What do we mean, though, by a "modern" lesson? If time flows, teachers change, children change, and the attitude of society to education also changes, how can a lesson remain "modern"? Or does our conception of such a lesson change, too? If so, what do we imply when we use the expression?

In the professional literature I have found what seems to me the most suitable answer—a modern lesson is characterized, first of all, by changes in the role and functions of a teacher, and also by a variety of cognitive activities undertaken by students. But I teach math, so the subject quickly gets interesting. How can I introduce any variety in the relentlessly fact-and-figure world of mathematics? Do the modern teaching approaches fit and work in a mathematics class? After all, they mostly stress not only presentation, but also extensive class discussion and organized reflection. What do those have to do with theorems?

One answer, a positive one, came out of an in-service training session for young math teachers in St. Petersburg. We leaders suggested planning a number of lessons on the same theme from the seventh-grade math syllabus

using different educational approaches. We started with the traditional approach and traditional methods. When we finished I asked the younger colleagues: "How are the students and the teacher positioned in this lesson?" The answer was: "The students are a subordinated object of teaching and the teacher is in command."

While planning the next lesson, we added cooperative methods to traditional teaching. As soon as we finished I asked the same question: "What are the positions of the students and the teacher in this lesson?" The answer was: "Students became more active; at some stages of the lesson they even played the leading role while the teacher assisted in their activity."

The third lesson was based on the Reading and Writing for Critical Thinking (RWCT) framework. Below are some opinions about this approach expressed by mathematics teachers participating in the creative laboratory work who systematically use RWCT for their lessons:

- The role of the teacher changes. She is no longer the commander, but the conductor of a harmonious orchestra.
- The efficiency of an RWCT lesson is connected with the active involvement of each student at each stage of the lesson and with his or her playing various roles in goal setting, in creating new meaning, and in the final reflection.
- Each student has an opportunity for self actualization.
- Everyone is interested in the work itself. Nobody is afraid of getting a bad grade.

This essay is an attempt to describe the experience and reactions of a small group of math teachers who are trying to develop critical thinking in their students.

Why have we decided to master the RWCT approach?

Let's turn to the teachers' opinions:

- I was tired of imparting a certain "portion" of knowledge to students every year, even though I always tried to apply various methods and strategies to engage students in active work. But at some point I felt a need to "walk in my students' shoes."
- I wanted to get rid of stereotypes, to renew my lessons, to get students interested, thus reaching a higher quality of knowledge. This way I grow, too.
- I wanted to make all my students engage in reflection. I understood that during a traditional lesson some of them were quite passive.
- Children have changed. I felt a need to learn to collaborate with them.

Our creative laboratory started working in the 2004/2005 academic year. The sessions were held not as traditional lectures and seminars, but as model lessons. During the lessons, we were simultaneously workshop participants and school students. When a teacher, having spent many years in front of a class, finds herself in a student's shoes the feeling is unlike anything else! We were like children, anxious to do everything perfectly, afraid to make mistakes, to reveal a lack of skill or knowledge. However, these sessions invariably resulted in a desire to apply to our

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own lessons everything we'd seen and heard.

The impressions from the first RWCT lessons we observed were unforgettable. Here were some comments:

- I was bewildered. On the one hand, all the children were working; on the other, the teacher's role was not clear. All through the lesson, I kept thinking—what can students learn in such a lesson? The teacher did not point out this or that important thing, did not draw the students' attention to certain important issues. How surprised I was at the end of the lesson when each student was eager to express his or her attitude to the newly learned material.
- It seemed that each stage of the lesson took too much time; at some points I felt it would have been better if the teacher explained things herself. But when they [students] started to reflect at the end of the lesson, I realized how deeply they had mastered the material. It was quite a shock.
- There were no silent observers at this lesson. Everyone worked actively, cooperated. It was a real joint inquiry.

Is it difficult to teach for active student engagement and critical thinking with mathematics lessons?

The answer is yes and no. As it happens, the RWCT approach is not simply a set of strategies for delivering new information, not just a new way of organizing the learning process: It is something bigger. It is an orientation to active

engagement and reasoned inquiry that can permeate every aspect of one's life. It has lots of "paths" of its own, along which everyone will find his or her own way through the confusion of the information surrounding us.

To successfully use this approach, first of all one needs to understand what it is based on and how, using its universal framework and set of effective methods, a teacher can create an atmosphere of partnership, joint inquiry, and creative problem-solving during the lessons.

What difficulties do we face when using this approach?

As I have mentioned above, this approach teaches students how to survive in the information flood and develops the capacity for working with text. However, texts in math are quite different from those in history, geography, or literature. They are "drier," i.e., more informative, saturated with various concepts and complicated terms, and, what is most challenging, are not always written in a language easily understood by students. All this makes it hard to use texts during mathematics lessons. Therefore math teachers more often than not take a piece of chalk and an eraser and, standing by the blackboard, offer their own interpretation of the new material to the students instead of having them read the text.

Because of the special character of mathematical texts, the application of the RWCT approach to our lessons is also somewhat special. I believe that readers – from other *Thinking Classroom* publications – know this approach is based

on a framework which consists of three stages: *Evocation – Realization of Meaning – Reflection*. This model creates a progressive logic in the lesson design and determines the sequence and combination of certain methods to be used in class. Unfortunately, some of the processes, which appear elegant and effective with social science and language-arts lessons, turn out to be problematic and, even worse, not always effective for the math lessons.

Therefore the first difficulty we math teachers face is how to adapt the suggested methods and strategies to our subject. The second difficulty is connected with a need to develop a kind of instinctive feeling as to which particular methods or strategies will prove the most effective for *these* children and *this* theme.

Certainly, the list of problems is longer than this. Here are some of them as formulated by the teachers themselves:

- We do not have enough time during the lessons and this is a real catastrophe. I can't demand that my students think faster!
- The school administration is not always supportive of this approach.
- There are only 24 hours in a day.
- There is no methods literature on how to use RWCT for math lessons.

After we conduct an RWCT lesson we always reflect on the outcomes of our work and listen to each other. Here are three teachers' reflections after their very first lessons:



- I often recollect my first RWCT lesson. I gave it in the seventh grade and the theme was *Properties and graphs of quadratic functions*. I was quite nervous as there was a group of workshop participants present and also a visiting guest, one of authors of the Russian RWCT guidebooks and the program certifier. I decided to demonstrate the so-called *enhanced lecture* and started by asking: "What questions would it be useful to consider when we speak about a function?" That's where the nightmare began! The students poured out lots of ideas and all of these ideas had to be written on the blackboard. Many of their ideas were mathematically illiterate and, even worse, were not always related to the topic. But I put them down on the board, even though my only thought at the time was how to find a way out of this situation without offending a single child and, at the same time, to imperceptibly lead the lesson in the necessary direction. Finally, I did find a way out, but we did not have enough time for the concluding reflection. And this reflection, in my opinion, is a very important part of a lesson if complete comprehension and general assimilation of information are to be achieved. Therefore I always try to allocate as much time as possible for this stage. To make a long story short, as I prepare a lesson now, having gained some experience, I carefully plan every step, every word, and especially the wording of my questions. And I carefully watch the timing of the lesson.

- My first lesson was in the ninth grade and the topic was *Arithmetical progression*. I planned to use *true and false statements* and the *INSERT* strategy. While preparing for the lesson, I thought over each step and each question. All went well: The teenagers worked with pleasure and I only "conducted the orchestra." But by the end of the lesson (at the reflection stage) all of a sudden I got panic-stricken. There even was a moment when everything went dark before my eyes. This happened because the questions I had prepared proved to be too easy for my students, and as a result there was no interesting discussion of the problem. I came to the following conclusion: We should have more such lessons so that both I and my students get used to them and gain experience.
- My first lesson was in the seventh grade where I used the *Jigsaw* strategy to master the theme *Congruence of triangles*. I never thought that it would take my students so much time to prepare for the presentation. We got terribly pressed for time. I came to the same conclusion as all my colleagues: It's necessary to have RWCT lessons on a permanent basis and to think over each stage more carefully.

There are many other things to share, but one point is clear: The RWCT approach can help a mathematics teacher fulfill basic educational and developmental tasks, can create an atmosphere of creativity and partnership in class, can develop students' mathematical discourse, and can promote a communicative culture.

We just need more experience in using it.

Our creative laboratory will continue to function in the next academic year, but we are going to re-arrange our work. Not long ago we read in *Thinking Classroom* about a new system of teachers' in-service training, based on the analysis of an individual lesson (Agnes Tuska, TC/P 7-1, pp. 26-29). One result of this system, for example, are the achievements of our Japanese colleagues, whose students show high and consistent results in various international math tests. The system has justified itself in California, too; there, as a result of learning to analyze students' actions and cooperating with colleagues, teachers have increased their professional competence in terms of their subject knowledge, their approach to teaching and their use of strategies.

So we have decided to devote the next academic year to working directly in class. We plan to create a bank of well-developed and peer-approved lesson plans for the eighth grade math syllabus. Why the eighth grade? Simply because each member of our small group teaches that grade. We hope for success!

We invite everyone to collaborate with us! Please send us your responses and ideas through the journal address:
thinkingclassroom@ct-net.net.

Tatiana Vvedenskaya is a methodologist at the Scholarly-Methodical Center in the Krasnogvardeisky district of St. Petersburg. She is an Honored teacher of the Russian Federation, St. Petersburg.



Strategic Moves

from William G. Brozo

In this installment of *Strategic Moves*, Dr. Doug Fisher makes a compelling case for and describes research-based practices that provide teachers with evidence they need to make their strategic teaching more responsive to all students.

William G. Brozo, Columnist and Editor

Checking for understanding: Strategies for ensuring learning

Douglas Fisher

There is no shortage of quality instructional strategies intended to help students learn. Research evidence collected over the past several decades points to effective approaches for using reading, writing, speaking, listening, and viewing across the traditional disciplines of math, English, science, and social studies, as well as a range of vocational subjects, such as visual and performing arts, physical education, and family and consumer sciences (e.g., Fisher, Brozo, Frey, & Ivey, 2006). While we expect students to increase their learning as a result of the engaging strategies we offer them, we don't always gather appropriate evidence to verify the extent to which they have learned. What else can we do to ensure that our students learn? How can we connect teaching and learning in powerful ways? For this issue of *Strategic Moves*, let's consider the other side of the desk. How do we know that our students have understood, processed, or learned the content we've taught? What strategies

can we use to check for students' understanding of complex ideas and information?

Sadly, in many classrooms (and, I'm sorry to admit, sometimes my own), we don't do a very good job at checking for understanding. We finish giving instructions and then ask, "Any questions?" Or we pause in our classroom discussion and ask, "Do you all understand that?" and then we march forward with our next lesson. Without any knowledge of students' understanding, our best instructional strategies are doomed to fail. While there are a vast number of ways teachers can check for understanding, we'll consider two broad categories: *response cards* and *writing-to-learn prompts*. As you'll see, teachers can use these strategies to check for understanding and determine the "next steps" in their instruction.

Response cards

There are a number of formats for response cards used to check for understanding, from 3x5 index cards to small dry-erase boards. In general, response cards allow all students to respond simultaneously to a question or topic. This allows the teacher to determine if

students understand the information, if groups of students need further explanation, or if specific students need supplemental instruction.

In a fourth-grade classroom, Ms. Jakonski is reading aloud *The Raft* (LaMarche, 2000), the story of a boy who is sent to live with his grandmother in the woods for the summer without a TV, anyone to play with, or anything to do. Each student in the class has two 3x5 index cards—one says "yes" and the other says "no." As she engages her students in an interactive read-aloud, Ms. Jakonski periodically pauses to ask questions. She balances her question types, ranging from comprehension to synthesis to prediction. At one point, she asks her students, "Is Nicky supposed to be on the river alone?" Hands shoot up holding "no" cards and Ms. Jakonski knows that her students are recalling information. Later, she asks, "So, what do you think? Will he save the deer?" The class is split; some hold up their "yes" cards and others display their "no" cards. Ms. Jakonski knows that her students are using their background knowledge to make a prediction about Nicky's ability to rescue a stranded animal. She continues through the book, stopping periodically to question her students so she knows when they understand and when they require additional information or scaffolding. In describing her method, Ms. Jakonski says, "I used to ask questions and then call on a student to answer. So all I really knew was that one student either



understood or didn't and I hoped the others either were listening or were in the same place as the student I called on. Now, I get a sense of the levels of understanding of all of my students."

In a physics classroom, Ms. Berov provides her students with dry-erase boards. She has these fashioned at her local hardware store. They are cut from shower board—a fairly inexpensive way to provide each student with a surface to write on and then hold up for her to see. During a class discussion of light waves, Ms. Berov asks students a series of questions to check their understanding. She provides this review before the class watches a film and takes notes on the content. For example, she asks her class, "Which electromagnetic waves can humans see?" and is pleased to see that they all have written "light waves." She continues, again with a recall question, "Which light ray has the longest wavelength and which has the shortest wavelength?" She knows that this information is critical to understanding the film and is concerned about the wide range of incorrect answers she receives. Ms. Berov instantly realizes that she needs to spend more time on this concept before showing the film. She asks another question, one she knows will take longer to answer and will provide her time to locate her instructional materials on wavelengths: "How do we 'see' using visible light?"

As students get to work on their responses, Ms. Berov prepares her "re-teaching" lesson. Checking for understanding is important,

she believes. "If I didn't regularly check what my students know, I'd be teaching them things that they couldn't use. It would be useless to spend time on the film I was going to show, given that the vast majority of the class was struggling with the concept of wavelengths. Having systems to check for understanding allows me the opportunity to re-teach as necessary and, as a result, ensure students understand the concepts of physics."

Writing-to-learn prompts

Inviting students to clarify their thinking through writing also allows the teacher to check for understanding. While we know that writing allows the writer to clarify thinking (e.g., Meyers & Jones, 1993), it can also serve as a formative assessment allowing the teacher an opportunity to get a glimpse of student understanding (Black, Harrison, Lee, Marshall, & William, 2004). It is important to note that writing-to-learn prompts used to check for students' understanding are not graded. They may be used for participation credits, but are not evaluated based on thesis development, organization of ideas, or writing mechanics. Instead, they are used by teachers to determine what needs to be re-taught and whether individual students need specific instruction.

For example, during a unit of study on the solar system, Mr. Kofos asks his fifth-grade students to explain why it is warmer in the summer. In response to this prompt, the majority of students

write about the ways in which the sun's rays hit the Earth at a more direct angle during the summer. Several note the tilt of the earth's axis and that it is warmer in some parts of the world in the summer but it is not summer all over the world at the same time. Mr. Kofos is pleased with his students' writing responses but notes a couple of students who seem confused. He plans to meet individually with these students to review the information and allow them to ask additional questions to clarify their understanding.

Similarly, Ms. Javier uses writing with her seventh-grade students to determine if they are making connections with the book she is reading aloud, *Stuck in Neutral* (Trueman, 2000). In the middle of a chapter, she asks students to predict (in writing) whether or not they think Shawn's father will really kill him. The written responses from her students affirm that they are engaged in the book, yet divided on whether a parent would kill his own son, even if it was a "mercy killing." According to Ms. Javier, "I use writing prompts to check my students' understanding of the literature we're reading. I want to know what they're thinking and that they can make reasonable predictions about the text, not just wild guesses that aren't based in the author's work."

Among many writing prompts, many teachers would choose the RAFT strategy (Santa & Havens, 1995) for its flexibility. It is a writing assignment with four

Strategic Moves

from William G. Brozo



changeable parameters. Teachers vary the *role* of the writer, the *audience* the writer is addressing, the *format*, and the *topic*. For example, writing a memo (format) from the perspective of a cell (role) to an organ (audience) about cellular transport systems (topic) facilitates a different level of understanding and motivation for students, especially when compared with the standard prompt “summarize what you know about the cell.” In addition to serving as a check for understanding, the RAFT writing prompt helps students develop perspective in their writing.

Mr. Trakas, a world history teacher, also uses writing prompts to check his students’ understanding of content information and he is especially interested in students’ use of the RAFT. During

their study of issues surrounding immigration policies, Mr. Trakas asks his students to respond to the following prompt: Role – an immigrant; Audience – president of the immigrant’s new country; Format – a poem; Topic – human rights.

Reading these poems allows Mr. Trakas to determine whether or not his students understand the current events they have been discussing. This prompt allows him to do so in a way that encourages students to share their own perspectives on the topic and not simply regurgitate information from the press or their peers. It also provides him the opportunity to challenge students’ thinking and move their comprehension of current events to deeper levels.

Final thoughts on checking for understanding

Checking for understanding establishes the link between teaching and learning. Implementing strategies for checking for understanding ensures that our instruction is most effective. Without regularly checking students’ understanding, we are at risk of pushing forward with content information that students cannot yet use. As Mr. Trakas notes, “I need periodic checks to know where to go next in my instruction. Every class is different, yet they all need to comprehend our content. These strategies help me close the gap between what my students know and what they need to know.”

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Douglas Fisher is Professor of Language and Literacy Education, San Diego State University, CA, USA.

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