

THINKING Classroom

MISSION STATEMENT

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.

HISTORY

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*Democracy must be born anew in each generation,
and education is its midwife.*
John Dewey

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THINKING Classroom

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Teachers, Classrooms, and Change



Patricia Bloem
and David J. Klooster

The Museum of Our Teaching Lives

Where were you ten years ago? Who were you then? What teaching issues were on your mind? What challenges have you encountered, and what successes can you count? How have you changed as a person and as a teacher over the past ten years?

Those were the questions that opened the 10th year reunion of the Reading and Writing for Critical Thinking project of the Czech Republic in June 2007. Thirty project participants congregated near a small Moravian castle to think about where we were then, who we are now, and where we are going in the future. We reflected on a decade of work together, and we

created the Museum of Our Teaching Lives, a small, temporary museum, with only a few galleries, but each one packed with the power to help us understand, experience and see our teaching lives in new ways. Even if you are not a participant in the RWCT program—even if, ten years ago, you were still a student in a university or school—we invite you to come along with us through a similar set of introspection exercises.

A museum is a place for remembering, for learning, for interpreting. A museum is at once retrospective (oriented to the past) and utopian (by selecting only the best, it aims to show the ideal). In past decades, historians, anthropologists, artists, and philosophers have debated museums' abilities to distort, oppress, or alienate, as well as to educate and enlighten. (Try a quick Internet search for museum theory, and you will find a wealth of websites and books that demonstrate just how complicated museums really are.) So we recognize that building a museum can be controversial, and we proceed with a measure of caution, especially with regard to claiming too much authority for our mostly whimsical exercise. At the same time, we know that museums can be celebratory, interactive places, sites for wonder and amazement, inviting the visitor to participate in the creation of meaning. That's the kind of museum we have in mind.

Let's begin with the Gallery of Self Portraits. Ten years ago, each of us was grounded in a set of

experiences, but we also were looking forward to an unknown future. We want your self portrait to capture both of these aspects of your being, so we suggest you draw a line down the middle of a sheet of paper and sketch yourself along that axis, with the left half being your self portrait as the teacher you were then, and the right half a portrait of what you hoped your teaching life would become. (We've included a couple of samples from our creative Czech colleagues.) Fill in the borders with words or symbols for the times you have lived through in these ten years. A decade ago some of us were facing turmoil in our communities—we knew the traditional ways of teaching were untenable, and we realized that our professional lives needed to be transformed. How can you depict your former self and your former aspirations on that sheet of paper?

When we examine our own lives of ten years ago, we recognize that our initial optimism about international education reform was naive. Some of our Czech colleagues expected that progressive educational reform could happen too quickly, and underestimated the challenges. For the two of us, as Americans, what especially startles us now is remembering how little we worried about our own backyard. Ten years ago the link between education and democracy seemed like a fairly straightforward matter. Today, in the aftermath of our controversial presidential elections at home, and an aggressive foreign policy of promoting democracy at the tip of a bayonet or a cruise missile, it has become much more complex for us to promote with integrity the idea that better classroom practices can lead

to the education of more responsible democratic citizens. At the same time, the experiences of the past ten years have given us the great gift of friendship with teachers in the Czech Republic, Russia, Armenia, Latvia, Guatemala, and a dozen other places. These friendships sustain our initial hopes that collectively we can learn from the best of each of our different educational systems, that together we are part of a movement that will transform the lives of teachers and students in the classrooms where we work, and that we will thereby influence the societies where we live for the better. Our own Self Portraits, then, have a glint of naiveté around the eyes, but we hope the optimism has survived.

The next gallery is the Gallery of Stories. Here is the place to recall those stories you find yourself telling and retelling when people ask about your teaching life over the past decade, or, in the case of some of us, about our work in RWCT. Peter Brooks has said that we "live immersed in narrative, recounting and reassessing the meaning of our past actions, anticipating the outcomes of our future projects, situating ourselves at the intersection of several stories not yet completed" (1992, p. 3). If you met a stranger who asked you to tell a story about why you teach, or about how you teach differently from the person down the hall, or about a time when you made a difference to a student, what stories would you tell?

Our stories might evoke wonder or surprise or laughter; they will certainly illuminate some part of our experience, and will cast light on how we look at the world. Good stories reveal character, examine conflicts, and explore the influences

Patricia Bloem and David Klooster, both children of teachers, are married and have three sons. Pat is Associate Professor of English Education at Grand Valley State University in Allendale, Michigan. David is Professor and Chair, Department of English, at Hope College in Holland, Michigan, USA.

of setting. When a teacher tells a story—about a student, about a lesson, about a workshop, about a colleague—she is involved in a process of making sense of her life. At the castle in Moravia, our Czech colleagues told stories that revealed their delight in teaching, their skepticism about change, and their pleasure in working together with like-minded colleagues. One of our own favorite stories is of singing with the Czechs late at night after the workshops. The guitars and the bottles of wine would come out after the day's work was done, and we would sing together into the night. Eventually, someone would begin "We Shall Overcome," that great anthem of the United States Civil Rights movement, and the English and Czech words overlapped and blended to mark protest movements from different times and different places, all of us singers implicitly demonstrating that little people doing small things together have the power to change the course of history.

But let's move on in our museum. Our next gallery is The Room of Successes. At our reunion we distributed small slips of colored paper and asked people to jot down as many successes from the past decade that they could. The Czech teachers had dozens of successes to call to mind—they wrote them on the small pieces of paper and pinned them up like clean laundry on a clothesline. They wrote things like "I am now able to express a different opinion in discussions,"

and "I wrote a PhD thesis on critical thinking," and "Former students tell me 'You were absolutely different from other teachers. You taught us to think!'"

Although reflecting on individual successes is a natural place for us to start, we can't stop there. What have we been able to accomplish as part of a group? Who are the other teachers who nourish us, and how do their successes complement our own? Many of us reading this journal have carved out our teaching lives in opposition to the status quo, but we don't work alone. We believe that good teaching is not defined by the rigid dictates of our school systems or the obsessive



marking of students' performance on a scale of one to five each time we see them. We don't use the same lesson plans year after year, because we know our students' needs change. Teaching is something dynamic and student-centered; perhaps unlike some of those around us, we see "thoughtful change as an integral feature of [our] professional lives" (Bloem et al., 1998, p. 241). Since we are part of a reform movement that is bigger than our solo efforts, we need to count the successes of our mentors and colleagues—even if they don't teach in our building—alongside our own, to see our successes as part of a progressive movement in teaching and learning.

Right around the corner, the Gallery of Obstacles, Stumbling Blocks, and Difficulties greets us with a riot of colors, symbols, words, mixed media, and avant garde music piped in with a relentless beat. Few of us are happy with the current states of our teaching lives, or pleased with the progress our institutions have made. We worry that our schools may not be better places than they were when we started in this profession; that

our students may not be leading more productive, more learned lives because of us; and that our teaching may not be helping our democracies to thrive. This is a room where we see the shape of our worries.

For many of us, government educational initiatives have been more of an obstacle than a help in the last decade. "Reform" movements that stress relentless testing of students, or that take professional decision-making responsibility away from classroom teachers, or that vacillate in the winds of political change with every new opinion poll—these government influences have become a serious stumbling block in recent years and have made sustained, thoughtful teaching infinitely more challenging. In some countries, government mandates on curricula have stalled for years, preventing the publication of new textbooks and paralyzing teachers so they cannot make progress on new ways of teaching. Everywhere, inadequate funding handicaps teachers from doing their best work. But there is power in being able to name what we are up against, and this is a room to name the obstacles.

The last section of the museum, the Gallery of the Future, is at the end of the corridor, where the sky is the rooftop, and we can see an open vista. The trick to making sense of this part of the museum is not to forget what we've learned from the other rooms, but to take along our stories and our successes into our schemes and plans for the future. It helps to have a colleague next to you, someone with whom to talk things over, someone to help you think about priorities and craft a vision for what your teaching life could become in your institution and your setting. In this Gallery, we take time to make plans, to think Big Thoughts, and to rally our friends and colleagues for the work ahead.

The Museum of Our Teaching Lives encourages us to be reflective about our profession. This Museum, like any other, tells only part of the story; unlike most other museums, it is meant to be only temporary. As soon as we build it, we put it away again, because although it helps us to gain energy and focus, our real work is teaching the students we are fortunate to spend our days with here and now. Still, we hope that by reflecting about where we have been, and who we have been, we can move forward with purpose and vision.

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We Have Come a Long Way

This year, we are celebrating the anniversary of the Reading and Writing for Critical Thinking (RWCT) program. Ten years ago, groups of International Reading Association members under the leadership of Scott Walter, Charles Temple, Jeannie Steele, and Kurt Meredith, supported by the Open Society Institute, set off to countries in Eastern Europe and Central Asia to provide RWCT workshops. For the vast majority of the participants, these workshops marked the beginning of genuine professional and personal development. No wonder they met with huge success: The volunteers' approach was collegial, they generously shared what they knew, and they invited the local teachers to do the same. Today, RWCT is known on five continents. We are celebrating its accomplishments in over 30 countries. And there are more interested in learning from and with us.

RWCT trainers are busy leading workshops in their own countries and abroad. RWCT has inspired new projects with diverse target groups, from parents and caregivers to youth organizations. We are helping students read and write better, debate confidently, reflect deeply, and make sense of the world around them. We are making it our business to see that schools equip their students to deal with the complex social issues they will confront as adults. To this end, for instance, in our project Anti-Corruption Education in Schools, we help students understand corruption: what it is, how it works, and most of all, how to fight it.

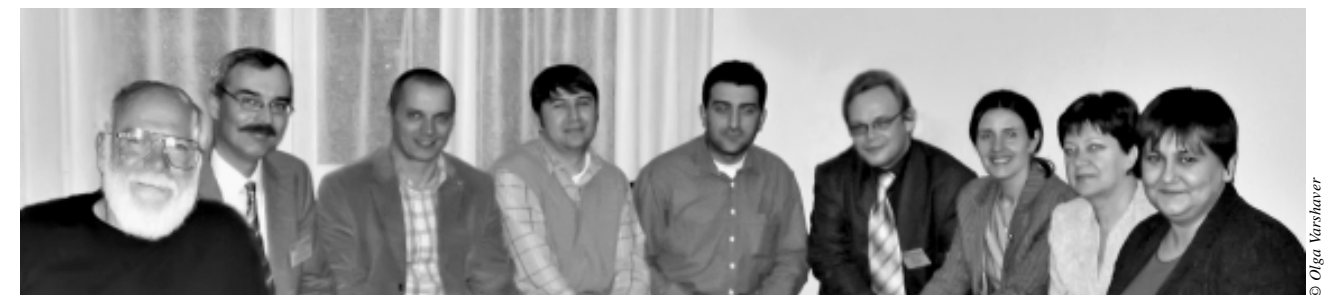
In several countries, RWCT groups have started teachers' journals, and have written about their professional experiences in books. They have established partnerships with local, regional, and national educational authorities. In brief, it is safe to say that RWCT has been a tremendous benefit to ongoing education reforms, especially east of the former Iron Curtain.

RWCT teachers, trainers, and certifiers value opportunities to come together. In March 2004, we met in Vilnius and contemplated the possibility of starting an organized network. We weighed the pros and cons, outlined plans, and started projects; we created a website, and we took on responsibility for continuing to publish *Thinking Classroom/Peremena*. In March 2006, we met again, in Kiev, and this time the question was: Should we register as a legal entity? The unanimous answer was yes, and so we did. The RWCT International Consortium (RWCT IC) was born in October 2006. Our mission is to promote quality education, critical thinking and active learning, civic literacy, international collaboration, and continuing professional development among educators all over the world.

RWCT IC brings together strong national organizations that are key players in the educational realm of their countries. In addition to reading and writing for critical thinking, we have built expertise in school development, anti-corruption education, curriculum development, education for minority-language students, literacy assessment, remedial teaching, multicultural and rural education, inclusive education, critical thinking in higher education, student government, textbook writing, civic literacy, and staff development. We aim to become a significant actor in the international education arena. In preparation for that, we have identified a pool of over 60 outstanding RWCT trainers and certifiers with skills in various languages. We proudly agree to share what we've learned and what we're doing, both among ourselves and in new partnerships, from Poland to Pakistan, and from South America to Africa.

We have come a long way, and we have a long way to go. When managing a wide network like ours, we never stop learning. We are grateful to all the invaluable helpers we have had in this process. With their continuing support, our journey will not only be easier, but also even more enjoyable.

Maria Kovacs, Executive Director, RWCT International Consortium



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Ten Years Together

Scott Walter



Photo from the author's archive

Glancing Back to Move Forward

My first contact with the International Reading Association (IRA) was in 1994 when Charlie Temple came to Ottawa to find out more about the Children's Book Project (CBP), a Swahili-language publishing endeavour out of Dar es Salaam, Tanzania. I was working for CBP's Canadian non-government partner, CODE, and Charlie was gathering material for his International Perspectives column for *The Reading Teacher*.

Our connection meant being able to share CBP's experiences and efforts to promote reading amongst East African children with a worldwide audience of educators; it was then that I began to appreciate the sheer power of the idea of

professional association and what it meant for the exchange of ideas and the sharing of best practice. Professionals were freely working together of their own accord to increase each others' knowledge and skills in the teaching and learning of reading. Now that was something the world could use more of.

Professional association is also something that many of the participants in *Reading and Writing for Critical Thinking* (RWCT) have had cause to reflect upon, as it's the heart and soul of this bona fide educational movement. For 10 years now the RWCT community has responded to a seemingly insatiable demand for instructional methodologies that promote active learning for knowledge and academic achievement. It has done this by tapping into the best of professional behaviour and the spirit of volunteerism, and by offering up activities that are not always readily available in many countries: opportunities for research; dissemination of ideas through publication; discourse and analysis of ideas through conferences; and targeted profes-

sional development through project work that combines the above. Through these activities RWCT has increased the ranks of practitioners who continue to build, change, strengthen, and influence the original ideas, and thereby has made a sizable contribution to the pedagogical profession itself.

Over the last five years I have worked in educational development under the auspices of the Canadian International Development Agency (CIDA). From this vantage point I have seen the national education plans of countries around the world, and what I can say is that from Mongolia to South Africa, from Kyrgyzstan to

Nicaragua and every point in-between, people are speaking the same language. There is a common appreciation and demand for the skills of comprehension, critical thinking, and problem solving; and the individuals, associations, communities and organizations that make up the RWCT partnership can be proud of the international force that they have become in modelling best practice in these areas. I hope all of them take a moment to recognize what they have accomplished over these 10 years.

However, spending more than a moment on this is a luxury we cannot afford, for there's work to be done and next steps to consider. The RWCT International Consortium has the professional capacity to do more—the partners are motivated, the connections are strong and long standing, and the demand continues to grow. It's time to expand, to build the empirical evidence base through research and publication, and to create the critical mass needed to take the ideas further. In effect, we need to sway public opinion. We want citizens in every country, north and south, east and west, to demand more for their children.

We need all to understand that the objective of education is not simply getting children into school, or completing the primary or secondary cycle, but providing students with the knowledge and skills needed for their well being and for national development. The poverty-reducing effects of school come not from the years of education received, but from the acquisition of skills such as the ability to read with speed and comprehension and to engage in constructive problem solving. National governments and development partners alike need to understand this fact and give the same emphasis to learning outcomes as to access, so that the world's increasing invest-

Scott Walter, one of the founders of the Reading and Writing for Critical Thinking Project, worked as Director of International Development Division for the International Reading Association from 1995 to 2002 and led the Association's part of the project.

He next served as Senior Education Advisor for the Canadian International Development Agency (CIDA) and recently took on the role of Executive Director of CODE, Canada.

ments in education generate a greater impact on improving people's lives.

However, to win over parents and policymakers, we need to present evidence of what works, and we must present it with recognition of the ever-changing reality in which we all live: a new wave of globalization and a rapid shift to technology-based knowledge societies where economies demand an ever more sophisticated labor force equipped with new competencies and workplace skills.

So we need not just a call to action, but a renewed commitment by all of us to a culture of universality, of inclusion, of participatory learning, and professional development.



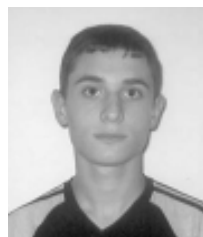
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A Russian RWCT trainer, Yelena Grudzinskaya, working with teachers in Tajikistan



© Teacher Training Center for Burmese Teachers

An RWCT workshop for Burmese refugee teachers in Thailand



Martun Avagyan,
15, Sakharov
School (#69),
Yerevan, Armenia

In our school curriculum there are various subjects, such as Human Rights and History of Religion, during which we learn that all people are different but also equal, that one must be tolerant of other cultures, that each culture is unique, and that we have to respect other cultures. We need to understand that people think differently, and if another person thinks differently it doesn't mean that we shouldn't communicate with him.

During our school classes, we have learned that we have various rights and responsibilities. We learn what kinds of rights we have; that all people have equal rights regardless of religion, age, or race; and that we have to know our rights in order to respect the rights of others. But together with the rights, we also have responsibilities, towards our country and our parents, and we are obligated to fulfill our responsibilities.

Studying history helps us learn that there has always been conflict between rich and poor people, and there has always been a need for a middle class. As for studying human rights, as I mentioned, all are equal regardless of the amount of money they have. Personally, I behave in such a way that I have friends who are rich and friends who are poor. I try not to spend more time with those who are rich, because I prefer middle-income people.

In our school we have several traditions concerning protection of our environment. Twice a year (in the fall and the spring) all the kids in our school are involved in tree planting near our school. We also have an agreement in our class that every Saturday one group should clean the classroom. Every three weeks the school kids clean up around the school, and everybody knows that this is so we can study in a clean school. This system makes us responsible for our own environment; it helps us to respect our work and to avoid making a mess. And this has also helped me to grow up with the sense that I should always be responsible for my own surroundings, a notion that will stay with me for my whole life.

As for our attitude towards the pervasive media... There are no special courses on that in our school, but our lead teacher (each class has its own lead teacher) usually discusses a lot of TV programs with us. For example, there was a program on TV about a certain court case that we discussed during our class—whether the judgment of the court was the right one, and was the accused person really guilty or not? This type of activity helps us develop our critical thinking skills, and we learn how to analyze situations, because the same thing might happen to any of us in future. After that program, our teacher also invited a policeman to talk with us about our rights, for example how we should behave if we are taken to the police station, and what kinds of rights we have in different situations. I learned a lot from these classes, and now feel that I am ready for adult life. All these

skills were given to me by our school, by our teachers, and of course by my parents.

This year I was chosen for the Future Leaders Exchange Program (funded by the Freedom Support Act of the United States Bureau of Educational and Cultural Affairs). I will leave for the United States August 21, 2007 and will stay there for one year, continuing my last year of high school there. I am sure that thanks to the lectures and discussions we had in our school, I am now ready to live in another country for a year, to live with a host family, respect their culture, and be responsible for my behavior.



Sadaf Pourmand,
14, Reynolds High
School, Victoria,
BC, Canada.

From my point of view [as an Iranian immigrant to Canada], school barely talks about different cultures, racism, and indigenous peoples' issues. When they do talk about these things, they talk about them only in the past tense. They never speak about how the issues are still here in the present. They stick to textbook material, and not social concerns relevant to the life of the community, such as issues around diversity, refugee displacement, and racism. Sometimes they talk about environmental and economic problems, but when it comes to topics like racism, immigration, injustice in politics, and stuff related to minorities, they talk about it as if it does not exist in our schools, our communities, and our lives. In Anti-Dote, an out-of-school group for girls that I belong

to, we can talk about anything, from racism to media manipulation. The people who control things don't consider us youth as capable activists who can learn about the issues that affect our lives. As young women, we need to learn about these important issues. If we never learn about them, we cannot try to make a change—because we *can* make a change. Even if we are only kids, we have the power to make our future better, and that's what Anti-Dote tries to help us with... and that's what school should help us with.



**Sasha Alejandra
Cegarra Salges,**
24, Universidad
Simón Bolívar,
Caracas,
Venezuela

As a senior in geophysical engineering, I do not have a solid background in the social sciences. I am not fully aware of social issues on a world geopolitical level. The current polarization of political and social issues in Venezuela has kept our thoughts turned inward, as we see victims of internal disasters, economic problems, and social issues. We are certainly aware of political diversity as our country struggles to reconcile widely differing ideologies and deals with the difficulty of their practical implementation.

As a geophysical engineer I have learned to deal with themes such as international oil policy, which is one of the most discussed issues here in Venezuela. However, recently students and university student bodies have become active in dealing with

issues such as human rights and freedom of expression, because of political events. At this very moment in which we live, in a country with such political diversity, we don't have any political model to study and follow. More than thinking that the educational process is equipping us with tools to deal with social and political issues, it's about living events that we haven't yet lived, and experiences that we don't have yet. What we have to offer is a world with new ideals, learning from our experience. So I'm not yet prepared to deal with these issues. I'm watching, learning, and hoping for the future.



Irina Cerba,
17, Elena Alistaru
High School,
Chisinau, Moldova

In the part of the world I come from, it is assumed that the school should give children their first knowledge about life. It is also assumed that the school should give children the basic information that they will ultimately use to build their own vision of the world. But is this really so? Is it true for every student, every country, etc.? I think there are several opinions about that.

I can only share from my school experience: I was lucky to be in a school that helped me improve a lot; and more than that, I have gotten to know myself much better. I have started to believe more in my strengths, and I've become more confident about the fact that I will be able to achieve some of my goals after graduation.

The school brought me new friends, taught me how to communicate with my siblings, and also helped me define what a good friend can be... But I think I am still too young to really understand this! My teachers taught me how to value things in the world around us, and how to feel that we are active members of society.

I don't actually believe that it is only the school that shapes our personalities and prepares us to deal with complex social issues—I think our families play even a greater role in this. Surely, there are other factors as well: the society, our friends, and many others. But in the end, everyone is trained by the school, so the school has a really important role to play in this process.

The school teaches us how to be friendly and generous with those around us, regardless of nationality, skin color, gender, or religion. I find the subjects at our school to be appropriate, and really useful in helping us decide what to do in certain situations: how to deal with people of different ethnic minorities; to what extent we can believe in the news as presented to us by the media; and how we can improve our surroundings—how to care for the environment, how to approach people who are suffering and who are poorer than we are, etc. We don't have special programs at school on such subjects, but the programs we have can indeed help and guide us on these issues.

Personally, I see school as an institution that, by educating and training people, builds and promotes peace in the world, and I am sure that whatever I have gained from my school will help me thorough my entire life. I already miss my school!

In Russia a Project is More Than a Project: Critical Thinking for Higher Education



Sergey Zair-Bek is Deputy Head of the Center for Management, Economics, and Legal Support for Education at the Russian Federal Institute of Education Development in Moscow, Russia. He is also President of RWCT-Russia.

The RWCT for Higher Education Project in Russia and beyond

The authors of the RWCT for Higher Education international project set out to involve the university communities in East European and Central Asian countries in the process of educational reform by providing new approaches for active learning and for the development of critical thinking. Two approaches were offered for implementing the project. The first, CTAC (*Critical Thinking Across the Curriculum*, Temple, 2002), introduced strategies for developing critical thinking that could be implemented in university courses. The other, CTFUS (*Critical Thinking for University Students*, Meredith & Klooster, 2002) contained a course entitled *Freedom and Responsibility*. Built around the main ideas of the RWCT program, this course highlighted freedom and responsibility as key factors in the development of critical thinking. All in-country teams—irrespective of which of the two approaches they chose—were encouraged to take into account local conditions, the needs of local university communities, and the requirements of the relevant educational authorities.

The original RWCT project was based on the dissemination model, training consecutive generations of teachers, each of which was expected to train the next generation. Such a model is undoubtedly effective if the trainers have sufficient time and material resources to carry out thoughtful and labor-intensive work with participants, including tutoring and the provision of regular feedback over a long

period. However, when time or funds are limited, the efficiency of the “train-the-trainers” model is considerably reduced. This weakness soon becomes apparent in the quality of the results, as quick consecutive training sessions, without sufficient time for reflection, may garble the best-intended ideas. Besides, many faculty members believe their own scholarly knowledge to be adequate, and resist any suggestion that their effectiveness as educators could benefit from changing their approach to teaching. Therefore, while they might be willing to engage in theoretical discussions on the topic, they may still be deeply reluctant to apply new ideas to their own practice. Because university culture is oriented toward theory and research, we were afraid even at the very start of the project *RWCT for Higher Education in Russia* that a “train-the-trainers” design might lead merely to a rash of ill-informed interpretive theoretical articles. All the above-mentioned concerns substantially influenced our decision to avoid the network model typically used by the RWCT project.

In designing the Russian higher education project we also considered—and rejected—the traditional reproductive model: a training seminar in which we would simply offer an overall strategy for introducing RWCT, and then suggest that participants implement the strategy in their own universities. Such a model has certain guaranteed effects. At best it provides positive effects that can always be traced back to their source, at least for a short time. At worst, it can’t do any harm to the educational process. However our rationale against using the reproductive model was clear:

- The target group of the project was university faculty (i.e. guardians of certain scholarly traditions and members of particular teaching cultures) and they (in particular, teachers of teachers) would likely aspire to adapt, and even to transform, the suggested ideas and methods to fit their own contexts and conditions. They would certainly not be interested in any project that was simply reproductive in nature;

- Final outcomes of reform projects can be unstable and short-lived, limited only to the time of the project or having only a brief post-project impact.

A project in Russia is more than just a project. This fact is confirmed by our experience with RWCT. In most cases it becomes a cause, or an instigating force. On the one hand, project ideas can lead to the development of many other local (and sometimes global) initiatives. On the other hand, a project can be a resource for its participants’ self-development and professional growth. In addition, it often proves to be a powerful tool for bringing together and maintaining a community of like-minded professionals, who continue to collaborate even beyond the framework of the project. For all of these reasons, we understood that it was crucial to work out an appropriate project strategy. We knew it would eventually determine the success not only of the project itself but also of many other things around it.

Project as research: A ‘free flight in preset directions’

We took into account that groups from different cities (Saint Petersburg, Samara, Nizhni Novgorod, and Novosibirsk) were going to participate in the project, and that each of those regions had a very different local educational situation, different administrative support, and different needs. However there was one factor that united all the groups. In higher education one of the key activities is research. A major goal is to equip students to participate in and contribute to a research culture. The value of research lies both in the product (a contribution to a particular professional area), and the process (a general approach to scholarship). Thus, we



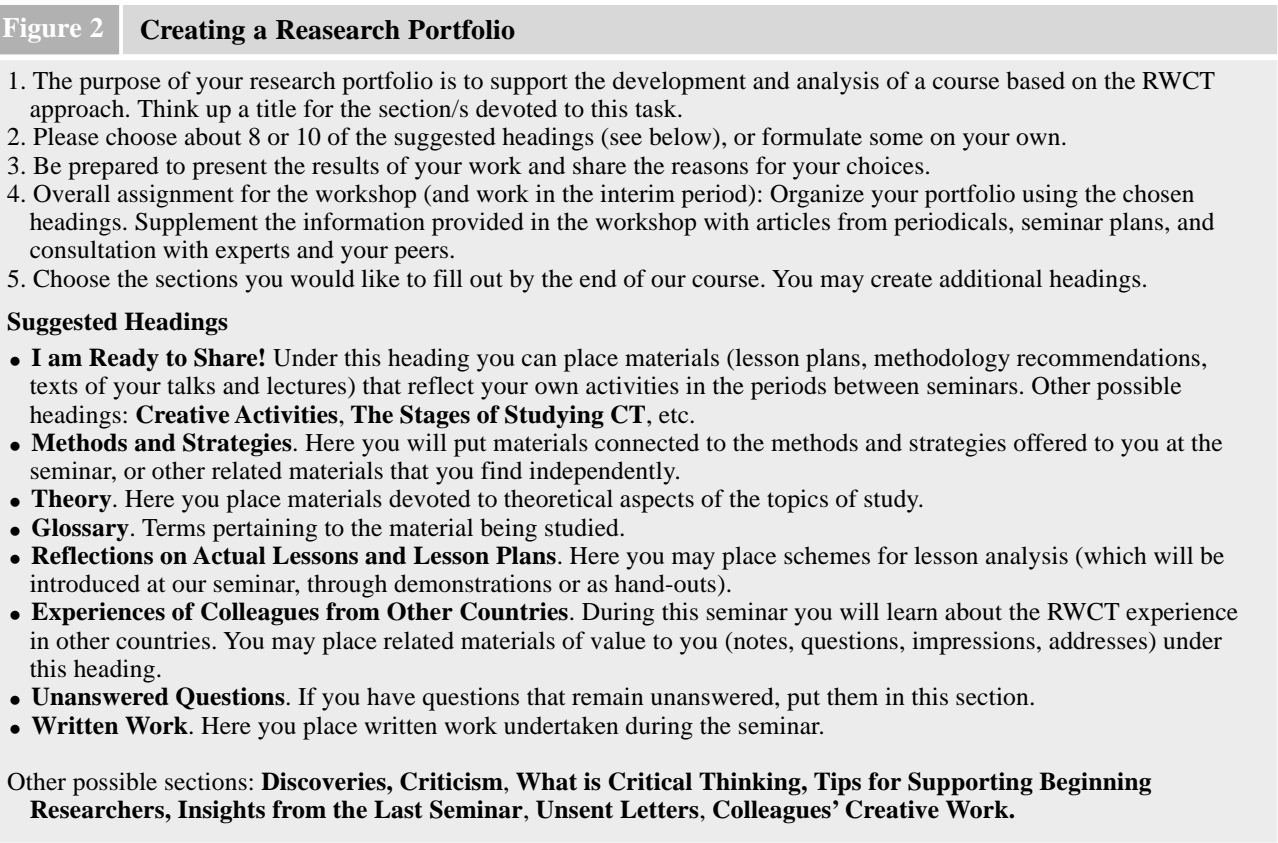
Conference participants from Siberia: G. Kashkorova and I. Valdman (Novosibirsk), T. Vnouchkova (Barnaul), and T. Vorobyeva (Tomsk)

chose an open research design model. This decision acknowledged that project goals could not be uniform for all regional groups, nor for individual participants—and that they weren’t expected to be. Consequently, after the first workshop, during which regional groups were introduced to the international strategy of the RWCT for Higher Education project, they were each asked to develop their own research theme, and to shape it according to the needs and character of their region.

The regional applications submitted were anonymously reviewed by the national RWCT experts. This peer review process was a productive forum for the exchange of opinions, recommendations, and questions among representatives of different regions. Reviewing applications from other regions helped participants not only to introduce necessary amendments to their own applications, but also to get a more substantial idea

Figure 1 Description of regional projects taking part in the RWCT for Higher Education Project in Russia

Saint Petersburg	Samara	Novosibirsk	Nizhni Novgorod (+ Kirov)
<ul style="list-style-type: none">• Research into opportunities for joint implementation in universities of such programs as RWCT for Higher Education, School–University, and Students’ Education Company• Creation of a school–university complex using the project resources• Encouraging the collaboration of schools involved in the RWCT program	<ul style="list-style-type: none">• Inclusion of participants’ research in the Samara regional project• Competence-guided approach to education• Research into the influence of the project on the development of students’ social competencies (school practice, functioning of student government organizations)	<ul style="list-style-type: none">• Research into opportunities for coordinated dissemination of RWCT in Siberian universities (Kemerovo, Novosibirsk, Barnaul, Rubtsovsk)• Research into processing of scholarly (humanitarian) information and into specific aspects of scholarly texts• Research into ways to attract administrative resources for project implementation	<ul style="list-style-type: none">• Self-study of the regional group as a potential model for a unified university community organized for joint project work• Main research focus: the influence of joint group work on overall project success (the character of the relationship as a model for other groups, e.g., university, inter-regional, creative)



- Small mobile research groups would need to be formed. However, participants should still be free to choose their individual path at the conference, and attend any sessions of interest to them.
- Every day some time should be allotted for individual and group reflection, in both oral and written forms.
- Research should be open and transparent. Presentations of jointly conducted research should be the highlight of the conference; and whenever possible, these presentations should become a starting point for new research, encouraging collaboration of people from different cities and countries, collaboration without borders or biases.

The conference plan offered below may be useful for those who wish to hold a similar event and make it memorable for both participants and organizers.

Preparatory stage of the conference

In the planning stage, key decisions were made: the general direction (conference-research); the central theme of this research (Critical thinking as a tool for developing an open university community); format and mechanisms for facilitating interactions and exchange during the conference; titles for the five themed sections (we called them tracks) that were to be announced in advance; themes for research groups that were to be formed on the spot (and thus the themes were kept secret until then); and formats for presentation of results.

Conference tracks

- Managing innovation in higher education through the introduction of new educational approaches
- The role of critical thinking in developing competent specialists in any field
- University research: new perspectives



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The writing workshop led by David Klooster (USA)

- The development of critical thinking in creating a university community
- The monitoring and analysis of the results of innovative activities to inform strategies for developing critical thinking in undergraduate and postgraduate students and young faculty members in universities

Formats for research presentations

- Themed conference sessions, with interactive talks up to 15 minutes (daily, noon–7 p.m.)
- Mini-seminars, up to 30 minutes (optional, in the evening)
- Round table discussion, up to 45 minutes (optional, in the evening)
- Poster presentations, during a dedicated time

Work at the conference

In September 2005, about 100 conference participants came to Moscow from all parts of Russia and from 14 other countries. They arrived with their prepared presentations and their preliminary choices as to what to attend marked in the conference schedules. At this point, all this looked like any other typical conference. However, on the very first day—at the registration desk, in fact—each participant was asked to choose a color... and this color identified the participant as a member of one of eight research groups, each consisting of 10 to 12 people.

Work of the research groups

It was expected that the work of these research groups, which was to last only three days, would provide participants with a model for scholarly collaborative activity. Each group was expected to develop a product, a written or graphic account of their collective reflection about their research project. This work was guided by facilitators, who encouraged the groups to compile all their results in group portfolios.

During Stage 1, participants were given 10–15 minutes to get acquainted, with the help of warm-ups and other strategies. In Stage 2, research project goals and problems were formulated and refined by means of various analytical strategies such as Venn Diagrams, Fishbone, etc. During Stage 3 each participant revised his or her own preliminary schedule of conference sessions with the goal of collecting relevant material for the group's research portfolio. Members of each research group were expected to attend different sessions, to get the best possible coverage of conference topics. Possible routes were discussed in pairs or groups, and were planned using graphic organizers. During Stage 3,

participants also agreed upon categories for their group portfolio, identified materials to be included in the portfolio, and discussed formats for presenting their information (graphic organizers, key words, essays, discussion web or joint inquiry charts).

Participants in our conference identified the following key problems for research, and designed their conference routes accordingly:

- Effective mechanisms for RWCT project dissemination
- Using RWCT to achieve the goals of the Bologna Declaration*
- Opportunities for personal and professional growth offered by RWCT
- RWCT's potential role in innovation in higher education;
- Effects (positive and negative) of introducing RWCT principles into universities
- Interrelations among RWCT and other innovations in higher education
- Cultural and philosophical considerations involved in reforming education (issues of globalization, and reforming in view of national, cultural, and philosophic traditions in the multipolar world);
- Common patterns and differences in the dissemination of RWCT among target groups in various educational establishments.

Conference procedures

The conference was organized into five themed tracks. Sessions for each of the different tracks were held concurrently. Participants were free to choose the section they attended (although of course members of each research group made sure that they visited different sections, to maximize their coverage of the topics). The sessions in each track were coordinated by a facilitator chosen from among conference participants. Responsibilities of the facilitators included:

- Opening and setting up the room for the session
- Making sure that all required equipment and materials were in the session room
- Beginning and closing the session at the scheduled time
- Introducing the speaker to the audience
- Chairing a discussion following the speaker's presentation (If the audience did not have enough time to ask all their questions, the facilitator collected them and passed them over to the speaker to respond to at other times)

* The Bologna Process aims to create a European Higher Education Area by 2010, in which students can choose from a wide range of high quality courses and benefit from reciprocal recognition and transfer of academic credit. The Bologna Declaration of June 1999 has put in motion a series of reforms needed to make European Higher Education more compatible, comparable, competitive, and attractive for Europeans and for students and scholars from other continents.



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An international group at work:
N. Kravchenko (Ukraine), T. Baidina (Belarus),
P. Papava (Georgia), and S. Bakhareva (Russia)

- Ending the discussion and summing up the session
- Providing a written report on the session to the conference organizers.

Poster presentations

All the regional teams in the Russian RWCT for Higher Education project offered poster presentations at the conference. (This opportunity was also given to individuals who had submitted applications in advance.) The regional teams received the following recommendations for their posters:

- The theme and the contents of the presentation should correspond to the goals of the regional research project (for example, the theme of the Nizhni Novgorod group research—RWCT as a potential model for a unified university community—should be reflected in their presentation);
- The stages of the research project should be displayed, and all materials should meet the criteria for research effectiveness established by the regional group;
- The presentation should include results of monitoring of the project's efficiency/productivity;
- The presentation should include examples of students' work and photos showing actual work with university audiences;
- The presentation should be interactive and designed to meet the needs and expectations of the audience;
- The presentation can be arranged into several thematic areas.

The poster presentations proved to be very successful. Attendees moved from stand to stand according to their interests, as



Boris Farberman (Uzbekistan)
and Lali Lomtadze (Georgia)

presenters spoke about their activities and responded to questions. A Visitors' Book was provided for comments and reactions.

The conference comes to a close

Throughout the conference, even as all the other activities were going on, the research groups were working diligently. All their preliminary work was carried out using strategies practiced by the RWCT teachers, such as RAFT, Cubing, K-W-L, Thinking at Right Angles, Thick and Thin Questions, Bloom's Daisy, etc. By the end of the conference they were ready to sum up the results of their work. First, each member of a research group gave a brief presentation to the group, and then they all worked together to prepare a joint publication, using a *written jigsaw* strategy (See Figure 4).

The most interesting products presented by our conference research groups are offered in the Appendix. All texts are published in the conference collection (Zair-Bek, 2007).



Poster presentation by Yelena Makarova from
Library at School, a biweekly newspaper published
by September 1 Publishing House, Russia

Figure 4 Written Jigsaw (by S. Zair-Bek)

1. Brainstorm three or four possible topics for publication
2. Subdivide into creative groups and produce texts in Written Round Table mode (Kagan, 1990).
3. Regroup into temporary working groups to discuss results and to produce a semifinal text.
4. Return to creative groups to revise the texts and develop the final product.

Sprouts from a seed...

The RWCT for Higher Education project in Russia is over. Now we can examine and summarize the outcomes, and evaluate them in light of the initial plans. It would certainly be a mistake to believe that the project changed the system of higher education in Russia, which has developed over the course of centuries. However, what really counts for us is that there now are people who have internalized the project ideas and incorporated them into their daily practice. We see sprouts all around. In Saint Petersburg and Nizhni Novgorod a new project has been started: Support of Education Reform Through New Educational Standards, Programs, and Curricula. In Novosibirsk the RWCT trainers are now working with the fourth generation of faculty who will use the RWCT approach in their practice. RWCT trainers from Saint Petersburg have created a special critical thinking course for the Intel business corporation, and their colleagues from Nizhni Novgorod have developed courses for business managers of various levels. A project in Russia is always more than just a project. It is a source of new ideas and new projects, a stimulus for creativity and for uniting like-minded professionals. Therefore, the project has not really ended. It has sown the seeds of doubts and questions, new achievements and successes, seeds that have sprouted and are already yielding new crops.

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Appendix

Products of research groups

RESEARCH GROUP 1

Goal: To ensure the "survival" of RWCT; to find ways to develop and sustain RWCT methods in a traditional education system.

The basic focuses of research:

- RWCT values

Credo: "Teach the model by modeling teaching"

The program values: active learning, academic honesty, flexibility, competence, workshops, motivation, evaluation, reflection, connection with life, students, success, understanding.

- In-service professional training is the optimal environment for introducing RWCT

Credo: "It is never too late to learn."

Conclusion:

What is necessary for survival?

- To gain positive experience of program dissemination using all personal resources available to the teacher
- To create a group of adherents (creative/project group) united by their readiness to disseminate new ideas and to grow as professionals
- To contribute to various other projects in which critical thinking can be useful (for example, Education Against Corruption)
- To support the ongoing improvement of educators' professional skills on the basis of content area and integrative connections
- To make the experience gained through the project accessible to all (bank of programs, curricula, etc.)

RESEARCH GROUP 2

Theme: Approaches to institutionalization of the RWCT approach and philosophy in the context of the Bologna Process

Issues:

- What methods can be used to introduce the RWCT project in higher education?
- How do we develop a bank of relevant texts and methodology literature?
- What is the role of the RWCT International Consortium in implementing the project in higher education?
- How can we monitor the efficiency of implementing RWCT in particular universities?
- How do we maintain continuity in education between the school and university levels?
- When using RWCT strategies, how can we evaluate the creative component of students' work?
- Does RWCT develop social skills?
- How can we avoid stereotypes in RWCT?
- How can we combine tradition and innovation?
- How does the modern philosophy of education understand the notion of quality?
- What difficulties do faculty face in the transition to a "credit" system?

Why should RWCT be a resource for promoting the Bologna process?

- The RWCT philosophy is aligned with the educational concepts adopted by the countries involved in the Bologna process.
- The RWCT framework and methods support the philosophy, making it well-grounded and current.
- RWCT includes both students and faculty in vigorous intellectual activity.

Possible approaches:

- Integration of philosophy and technology into a separate academic discipline
- Interaction with other programs, and openness to other trends in education that share a common philosophy
- Purposeful and constant evaluation of effectiveness, with ongoing updates and revisions

Causes for optimism:

- Interest in the RWCT program is growing.
- RWCT experts and trainers now have considerable experience, and have a great desire to work.
- We have the support of our efficient and flexible Consortium staff.

Enhancing Active Learning and Critical Thinking in Higher Education: University Teachers' Perceptions of the ALCT Program

Photos from the authors' archives



Vlasta Vizek Vidovic is a professor of educational psychology at the University of Zagreb, Croatia.



Visnja Grozdanic is a teacher of organizational psychology and Vice Dean of Vern Business College in Zagreb, Croatia.



Sharon B. Kletzien is a professor and Chair of the Department of Literacy at West Chester University of Pennsylvania, USA.

This paper describes the transformation of the Reading and Writing for Critical Thinking (RWCT) program into the Active Learning and Critical Thinking in Higher Education program (ALCT) as implemented in the higher education context in Croatia, based on the RWCT Prague conference in 2001. The initial experiences with program implementation are described, with a particular emphasis on innovations intended to increase the relevance of the program for university teachers. Preliminary evaluation results are presented.

Introduction

Research on initial teacher education in Croatia has revealed that the teaching methods of university teachers engaged in teacher education are predominantly teacher-centered and discipline-oriented (Vizek Vidovic, 2006). The traditional approach to teaching, as transmission of information, does not enable students to integrate the huge amounts of mechanically stored information into meaningful and personalized knowledge. One of the factors contributing to the persistence of the discipline-oriented approach to teaching at this level is the educators' own uni-dimensional perception of their role. The prevalent belief is that the higher education teacher is primarily a researcher, whose excellence in research is both necessary and sufficient for high quality teaching. The consequence of such an attitude is a lack of systemic efforts within the higher education system aimed at changing teachers' skills and competencies in teaching. The crucial question is how to tackle this complex issue, keeping in mind that the programs offered must be perceived not as an unnecessary burden, nor as a threat to academic self-

esteem, but as a useful means for professional and personal growth.

Program development

The program known as Active Learning and Critical Thinking across the Curriculum in Higher Education (ALCT), aimed at raising university teachers' competencies for a student-centered approach to teaching, was developed in Croatia in 2003, following the successful implementation of the international program for school teachers Reading and Writing for Critical Thinking (RWCT) (Klooster, Steele, & Bloem, 2001). The primary model used to develop both programs is a three-phase framework for teaching with a solid theoretical base in cognitive learning theories, a special emphasis upon social constructivism, and an experiential learning model (Steele, Meredith, Temple, 1997). The three phases of the model, designed to facilitate deep level processing, are named according to their specific functions in the learning process: *Evocation, Realization of Meaning, and Reflection* (ERR). The ALCT program includes the same three phases, comprised of tasks similar to those in the RWCT program. The purpose of the *Evocation* phase is to prepare students to relate their previous knowledge, feelings, and experiences to the study topic. In the *Realization of Meaning* phase, students are exposed to new ideas, concepts, and procedures in a way that fosters their active engagement in deep information processing. In this phase the teacher acts as a facilitator who enhances students' critical approach to the meaning and relevance of new information. In higher education, an important aspect of this approach is an orientation toward problem-based tasks and collaborative projects. In the *Reflection* phase, students internalize and integrate

the new knowledge, and interact with peers to consider the possibilities for applying it in new settings, and evaluate its significance. (Steele, Meredith, Temple, 1997).

Having in mind the basic ERR framework, the main goals of the ALCT program can be described as follows: 1) development of a new conceptual framework for teaching that promotes critical thinking and self-regulated learning in students; 2) development of a new set of skills to promote open and responsible interactions in course settings; 3) adoption of a wide repertoire of effective techniques to facilitate critical thinking and meaning construction across the curriculum; 4) development of reflection skills; and 5) readiness to provide support to other university teachers. Expected outcomes have been defined at teachers' and students' levels.

It has been assumed that teachers applying the ALCT teaching approach will:

- Accept a new role of university teachers as facilitators of learning
- Develop a high level of competence in teaching techniques that encourage students to become self-regulated learners
- Acquire new social and communication skills, enhancing open communication with students
- Develop increased awareness of students' diversity and their individual needs

- Have deeper insight into their own motives and actions, and the consequences of their actions,
- Be prepared to engage in ongoing improvement and professional growth
- Become agents of change with regard to teaching practices in the academic community

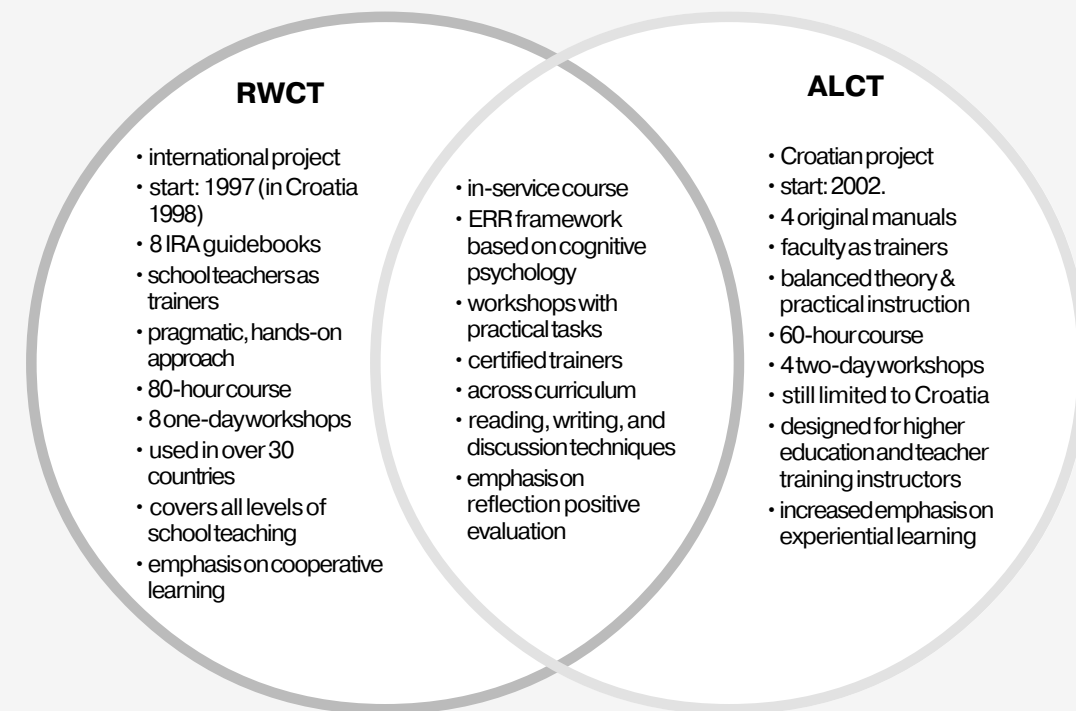
Consequently, it has been assumed that students exposed to the ALCT teaching approach will:

- Show deeper understanding of material studied, and have a richer knowledge base
- Develop critical thinking skills and creative approaches to knowledge acquisition
- Be able to transfer and apply abstract concepts and principles for practical problem solving in real-life situations
- Become responsible learners prepared for lifelong learning
- Develop social and communication skills important for co-operative learning
- Be sensitive to social issues and ready to contribute to social development and welfare, not only as field experts but also as responsible and caring citizens

Program implementation

The ALCT program is designed as a 60-hour course, divided into four modules/workshops held approximately six weeks apart. The number of participants in a group is limited to

Figure 1. Comparison of the RWCT and ALCT programs in Croatia



25, and each workshop is run by two higher education faculty trainers. Each workshop is dedicated to a specific topic and is presented in several ERR units, following the format of a typical lesson (i.e. 45 or 90 minutes). After each unit there is a “deconstruction session,” where participants are invited to discuss the effects of the teaching approach and techniques used in the preceding unit on their learning.

Between workshops, participants are asked to apply the knowledge and skills acquired in the workshop in their own classroom contexts, and to report on their experiences for the next workshop. Participants are also expected to visit one another’s classrooms and report on their observations.

Each module of the course is accompanied by one volume of the training manual *Active learning and critical thinking in higher education* (Vizek Vidovic, Kletzien, Bekavac, Grozdanic, & Vlahovic Stetic, 2005). The manual combines texts explaining the theoretical foundations with descriptions of practical teaching techniques that promote a student-centered approach to teaching. Two activities developed for the higher education teachers are described in the sidebars.

- The topics covered by the manuals are:
- Volume 1.* Active learning and the ERR framework for teaching
 - Volume 2.* Reading, writing, and discussion for critical thinking
 - Volume 3.* Cooperative and experiential learning
 - Volume 4.* Planning and assessment of learning and teaching

The first manual has the important task of introducing the rationale for changing the approach to teaching. It deals with the new context in higher education—the internal and external changes that affect the process of education and demand a response from the universities. The first manual also explains the new paradigm for teaching, outlines the theoretical bases for the relationship between teaching and learning, and gives special

emphasis to distinguishing between superficial and profound approaches to learning. This part of the manual is especially useful for those higher education teachers who are not satisfied with simply learning how to teach, but who also want to understand the theoretical basis for the recommendations made. University teachers who participated in the original RWCT program suggested that the ALCT program include these theoretical explanations. The second manual outlines RWCT principles. The third manual deals explicitly with experiential learning, an addition to the original RWCT program. The fourth manual covers several important aspects of the teaching process: planning for teaching at the university level, monitoring students’ progress, assessment of students’ knowledge, and monitoring the teacher’s own work.

Each manual includes an appendix that describes the new techniques, structured to address the following issues: advantages, duration, group size, advance preparation, procedures, and application of the technique.

Program participants

ALCT cohorts are organized into heterogeneous groups with participants from all disciplines. The rationale has been that mixed groups will contribute to the richness of the educational experience, and will demonstrate that basic principles of the ERR framework can be successfully applied across fields. Croatian higher education has been characterized by closed research communities within each field. It was thus anticipated that mixed groups would help to break down traditional disciplinary barriers, creating opportunities for future collaboration in both educational and research settings.

One hundred eighty seven participants have now completed the ALCT program. These include faculty from five Croatian universities (Zagreb, Rijeka, Osijek, Split, and Zadar), as well as from several independent vocational colleges in diverse academic fields (arts, humanities, social and natural sciences, biomedicine, life sciences, and engineering sciences). Attendance is voluntary, but participants must pay a moderate fee and must complete 100% of the program in order to receive a certificate of attendance. The drop-out rate has been about 20%.

Evaluation procedure and methods

An integral part of the program is an in-depth evaluation procedure comprising aspects of both process and content, and short-term and as well as long-term perspectives. At this stage of program implementation, the evaluation is

Examples of activities and techniques adapted for university teachers

- Thematic unit on *Happiness*
Demonstration of experiential learning through a collaborative interdisciplinary project
- Evocation I* After a read-aloud of a short story about happiness, the trainer makes a cluster diagram on the board as the whole group brainstorms answers to the question: *What disciplines can contribute to our understanding of the concept of happiness?* Participants are then divided into several groups according to their subject areas: psychology, law, social work, literacy, biomedicine, anthropology, etc.
- Evocation II* Each participant is asked to formulate survey questions/problems that could be used to research happiness. Each group chooses three questions on which they will base a project. They receive a Project Planning Table on which they outline problems, hypotheses, and data sources. Project plans are the presented to the whole group.
- Realization of Meaning* The Content Area Groups strategy is used. Each group gets a specially prepared text dealing with happiness from the point of view of their own discipline. Participants each choose a role in the group (investigator, question asker, fact checker, recorder, reporter, connector, etc.). Groups analyze their texts, answering 4 basic questions:
Is this text a relevant resource for investigating their problem?
Does the text provide answers to some of their questions?
Should they change some of their questions or hypotheses?
Was their discussion improved by taking different roles? The results of the activity are reported to the whole group.
- Reflection* Participants write a 10-minute essay on the topic *What could we initiate and develop in our students using experiential learning?* A few essays are read from the Author’s Chair. The role of an interdisciplinary approach to research is also discussed with the whole group.

Assessment using rubrics

- Evocation I* Participants are asked to recite a short poem of their choice. The listeners inidivdually assign a grade to each recitation, from 1 (poor) to 5 (excellent). The trainers also recite a poem (usually giving an intentionally poor performance) and this grade is noted separately. Each participant then draws a chart of the frequencies of all the grades he/she has given to the others’ performances. The trainer tallies the grades given by all participants and makes a composite chart. After examining all the charts (exhibition technique), the group discusses differences in individual charts, with the goal of illustrating personal bias errors.
- Evocation II* Participants focus on the range of grades given to the trainer (who deliberately demonstrated poor reciting). The wide range of these grades encourages discussion about the subjective nature of the criteria involved in these evaluations. The trainer writes all of the mentioned evaluation criteria on a poster, e.g., length of the poem, poem content, posture of the performer, rhythm, tone of voice, emotion, expressiveness, etc.
- Realization of Meaning* After a mini lesson on the meaning and construction of rubrics, participants are divided into groups of four to five persons. Each group chooses one of the criteria they used to grade the poetry performances and creates a rubric for three levels of performance: poor, average, and excellent. All groups then present their rubrics to the whole group.
- Reflection* Participants discuss the advantages and disadvantages of rubrics, and their possible use in the higher education assessment process.

based on personal reports from the workshop participants. In the next stage, the participants’ students will be asked to contribute their perceptions of the teaching and learning methods used by their teachers.

The evaluation procedure comprises the following:

1. Immediate evaluation of daily workshops and modules involves *daily exit logs* with open-ended questions, and quantitative ratings of various elements of workshop modules. The daily exit logs are used to qualitatively assess (a) what participants believe to be the most important thing they have learned that day, (b) whether they need additional explanation of some points,

and (c) their general perceptions of the day’s workshop. The exit logs have two purposes: They help participants reflect on their experience; and also offer them an opportunity to clarify certain points and to express their feelings. At the end of each workshop participants are asked to fill in a *module evaluation form* consisting of both qualitative responses and quantitative ratings. Participants are asked what has been most important for them, what they find most useful, and what they will change in their teaching as a result of their participation in the workshop. They are also asked to rate their overall satisfaction with the workshop on a scale from 1 (poor) to 5 (excellent). General



Photo from the authors’ archives



CREATIVE EVALUATION

It was nice but it is not the end
We are just starting a trend!
INSERT technique is the thing
Other methods help us swing!
Let us give you a present too
The ALCT boat
To the rescue for you.

Participants from Rijeka

comments and suggestions for the future are also invited.

2. Short-term course evaluation is conducted immediately after the last workshop, and includes a structured form as well as an open-ended evaluation. At the end of the fourth module, which is typically offered about six months after the first, participants are asked to fill in a *course evaluation sheet* describing what has happened in their own classrooms between the first and the last workshops. Specifically, they are asked about: (1) changes (if any) they perceive in their ways of teaching; (2) changes they perceive in their students' behavior; (3) obstacles they have encountered; (4) positive and negative experiences they have had with the application of new teaching skills; and (5) which methods they perceive as most useful, and which they see as least useful. They are asked whether they would recommend the program to their colleagues; and finally, they are asked to give an overall rating of their satisfaction with the program, on a scale from 1 (poor) to 5 (excellent).

3. Long-term course evaluation takes the form of a structured questionnaire distributed six–eight months after the course, when participants are invited back to receive their certificates. The group meets to exchange their reactions to their experiences, and they are also asked to fill in a *long-term course evaluation sheet*. The questions on this form correspond to those on the short-term

evaluation, but participants are also asked to describe which of the new methods and techniques they feel have been most successful in their own practice.

Evaluation results

1. The daily logs offer only qualitative information. On average the logs generated about 4–6 requests for clarification each day. These questions were discussed the following day, to ensure that possible misunderstandings were cleared up before beginning a new session. On average, 90% of the comments were positive, expressing satisfaction with the workshop experience.

2. Comparison of short- and long-term global ratings of the program show that average ratings for each workshop are very high ($M=4.55$), which corresponds to the overall short term rating of the program ($M=4.56$). Long-term evaluations show an increase in overall satisfaction. More than 77% of the participants give the highest rating (5) and the average long-term rating is 4.75!

3. Qualitative evaluation shows the depth and breadth of changes at both the teacher and student levels. The following are examples of two participants' comments:

- *Now, I am more satisfied with myself as a teacher. I feel that I did something important to raise my competence and it makes me happier.*
- *I was deeply touched when my students told me that nobody else works with them like that. It was very rewarding and gratifying for me, and almost made me cry.*

To summarize their comments, the participants' greatest satisfaction was derived from the perceived changes in their students, as manifested in greater interest in the subject, more regular attendance, greater openness in communication, greater readiness to enter into discussion, and greater independence and self-regulation in learning. In addition, students used more effective learning strategies, and were able to think more critically and creatively.

Regarding changes in their teaching, participants most often mentioned that they now pay more attention to the relationship between teaching goals and learning outcomes, use more diverse assessment methods, get better feedback from students, think about how to adjust teaching methods to the students' educational level, and seek to implement teaching techniques that will activate students' interest and increase their motivation for learning. Teachers also reported that they pay more attention to acting as a facilitator of students' learning, trying also to help them develop more efficient learning skills.

The long-term evaluation revealed that participants feel very successful in:

- Application of approaches and techniques to enhance active learning in class (82%),
- Application of the methods and techniques of cooperative learning (76%),
- Application of techniques to enhance critical thinking through reading, writing, and classroom discussion (74%),
- Application of techniques to involve students in evaluating their own work (57%),
- Application of methods of experiential learning and project teaching (41%),
- Communication and co-operation with colleagues in implementing innovative teaching methods (37%)
- Use of new methods of assessment and evaluation of student performance (33%).

Participants ascribe their successes to: the experiential and student-centered approaches to teaching demonstrated at the workshops; involvement in reflective discussion; cooperation with colleagues from the program; and to the ability to verify ideas by using the program manual. (Roughly 10% reported using their manuals *always*, 50% use them *often*, and 40% *seldom*.) They also noted the impact of the immediate positive feedback from their students.

The greatest obstacles to implementation of participants' newly acquired knowledge and skills were: insufficient time for thorough preparation; lack of motivation on the part of some students to participate actively in lessons; too many students in a class; inadequate space; and students' preconceptions regarding university teaching and learning.

All of the participants would strongly recommend the seminar to their colleagues, mostly because, as one of them said, "I have learned how to make the impossible possible: how to make my students really motivated to learn what I am trying to teach them!"

Next Steps

These preliminary data convincingly show that workshop participants are persuaded that most of the intended outcomes have been achieved, and even improved upon, with the long-term application of this new approach. The next stage in the evaluation of the program will involve examination of students' perceptions of the new approaches to teaching, and an evaluation of the quality of the students' performance in comparison to that of students exposed primarily to the more traditional ways of teaching.

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View from an expert colleague

In discussions with my educational psychology colleagues in Croatia, we agreed that discipline-centered instruction, rather than student-centered instruction, is the norm in most universities and colleges. To adopt a different approach in higher education, however, faculty must understand the theoretical basis for change. The ALCT team has created a series of manuals that provide the necessary theoretical basis as well as practical applications for more student-centered instruction.

I have had the opportunity to attend ALCT workshops in both Zagreb and Rijeka in Croatia, and have been impressed with participants' enthusiasm for the ideas. Higher education faculty are eager to be more effective in reaching students in their classes. When participants describe their experiences in working with some of the ALCT ideas, their excitement about their teaching and about their students' responses is obvious.

Interestingly, ALCT has won acceptance from many different disciplines across the university. Participants from economics, law, philosophy, science, and engineering have all expressed satisfaction with the workshops and the programs. The trainers' decision to work with a heterogeneous group has proved to be very wise; faculty working across disciplines have discovered commonalities that they had not previously recognized. The cognitive theory basis for the ALCT program is applicable in any situation where students are expected to learn and to apply their learning to problem-solving, so the ideas can be applied across many disciplines.

Because the ALCT trainers themselves are respected faculty members in higher education in Croatia and have utilized the ideas from ALCT in their own classrooms, they have the credibility needed to help bring about change. The workshops are always thought-provoking, grounded in solid theory, and replete with effective modeling of the principles of ALCT. It is no surprise that the evaluations of the ALCT program and the individual workshops are so positive! The results of the evaluations simply substantiate the many comments that I have heard from workshop participants.

Sharon B. Kletzien

Adriana Nicu

Reflective Writing— A Knowledge Building Tool



Adriana Nicu teaches in the Department for Didactic Staff Training at Lucian Blaga University in Sibiu, Romania.

Writing involves a recursive knowledge-building cycle of speaking—writing—thinking; focused communication and interaction with others; and a perspective on the world. When thoughtful writing activity is incorporated into various educational disciplines, it can become a powerful social tool that is both authentic and reflective.

In order to foster genuinely reflective writing, however, the teacher must set appropriate learning tasks, tasks that will allow students to understand through direct experience that writing is an extended process, inherently related to thinking, and expressive of each writer's own personality.

This article describes how reflective writing was incorporated into lessons for various grade levels in various subject areas: in Natural Sciences (3rd grade), Civic Education (4th grade), Geography (5th grade), and Physics (6th grade). The types of texts created include argumentative essays, five-minute essays, and student journals.

The Romanian National Curriculum endorses a *communicative-functional* approach to support the development of communication abilities. This model implies the integrated development of both receptive and expressive communicative competencies, so that students are able to interpret oral speech and written information, and to express themselves both orally and through writing. Consequently, attention is given to building students' ability to use written language appropriately across a wide variety of communicative situations.

According to the Romanian Curriculum, writing itself also represents a discrete subject to be studied. The main objectives of the writing course (Language and Communication)

are to be achieved through a series of exercises, beginning with exposure to the symbols and associated sounds that make up the alphabet, moving forward to the construction of words and the appropriate use of punctuation, and eventually leading to the development of the skills required to create and edit one's own texts. Hence, writing is conceptualized as an intellectual activity, involving thinking and practice directed toward the acquisition of skills, which become more integral and automatic over time.

Writing is typically learned after the fundamentals of oral language have been mastered, and after the emergence of inner language (around the age of 4,5–5,5). Writing is clearly related to thinking in that it requires systematic application of 'rules' and conventions, and calls for clarity and conciseness (Popescu-Neveanu, 1976). At every stage, writing involves individual interpretation and decision-making, and thus almost always carries a strong imprint of the writer's personality.

Reflective writing

Writing can serve as an efficient tool for intellectual work and as a means of accessing knowledge. Developing competence in both oral and written language is an educational priority, because such competence is a key means by which students can fully understand the information conveyed in different subject areas.

Educators should promote *reflective* writing and speaking in order to allow their students to formulate questions, express their own views of the world, comprehend concepts, and create logical categories, thereby engaging in an ongoing process of refining their understanding of the information studied. Reflective writing can involve encouraging students to write what they think they know about a given topic or subject, to write their questions/problems related to the topic, to read about and discuss those questions/problems, to revise and prioritize their ideas, to organize their questions/problems in tables and columns, to create graphic representations, to synthesize information and make associations among ideas, to review what they have learned, to reformulate, etc.

Of course, to encourage effective use of reflective writing by their students, teachers in all subject areas must formulate appropriate learning tasks. Through such activities, students learn that writing is not restricted only to Language and Communication classes, not something they need to be concerned about only during their Romanian Language and Literature class, but that it is a valuable tool for accessing and understanding the content of other subjects as well. Students also learn that writing represents an extended process, involving different steps and stages, re-emergences and re-writings; and that this process is intimately related to thinking, and so becomes an expression of one's own personality.

In guiding students through the writing process, the teacher moves through a recursive knowledge building cycle of speaking—writing—thinking, which involves the development of writing skills (through writing exercises), communication (through students' discussion), and thinking processes (through reflective writing).

It is very important for the teacher to recognize and value the role played by students' prior knowledge and experience, in language learning and in the construction of an understanding of the world. Writing activity plays the role of *cognitive operator* in the processing of information, and therefore should assist students to state definitions, to devise classifications and ratings, and to conduct analyses and synthesize information, to develop interpretations, to make connections, etc.

Because practicing this sort of writing allows the student to play an active part in the various communication situations of everyday life, reflective writing is sometimes also called *social* writing or *authentic* writing. Reading and writing in a wide range of genres—letters, compositions, literary prose or poetry, summaries, advertisements, instructions, recipes, etc.—presents an endless array of opportunities for practicing reflective writing, across all disciplines and subject areas. For example, math and science activities related to time measurement and time zones, calculating distances on a map, financial calculations, and currency exchange, can all be enriched through—and offer relevant practice in—reflective writing. Similarly, in geography, tasks such as locating points by latitude and longitude, or describing the geographic location of particular countries, can be designed to incorporate thoughtful use of writing. Other examples of tasks that can be enhanced by reflective

writing include all kinds of historical studies—studies of major historical events, famous historical figures, or personal genealogical history.

The practice of reflective writing

Knowledge building involves the orientation of writing activity towards the production of the types of texts and genres commonly used in the different subjects and disciplinary areas. In my study of instructional strategies related to critical thinking, I undertook a comprehensive research study with 3rd–6th grade students to investigate how they generated reflective writing in various contexts.

Argumentative essays

Argumentative essays are a type of reflective writing in which the author adopts a certain position and defends it by stating arguments. The assignments given to students in the 3rd and 5th grades to build their skills in writing argumentative essays are described below. Their aim is to engage students in an interactive process by means of the following steps:

1. A controversial topic is introduced (perhaps through the reading of a story), and students are invited to voice their views and opinions about it, with the caveat that, regardless of their personal engagement with the topic, the discussion must remain polite.
2. The Value Line strategy is explained. For instance, if the topic is, *Do you come to school to learn how to ask questions or to*



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learn answers? one student might state that she comes to school in order to learn how to ask questions, while another might respond that school means learning answers to life's problems. These two then station themselves at opposite ends of an imaginary Value Line, and the other students must line up between them, positioning themselves according to their relationship to the two opposing poles of the argument. Next, participants compare their views with those of their neighbors, to be sure they are in the right place in the line. After conferring for a couple of minutes, each cluster or individual is given the opportunity to express their particular point of view on the issue. (Other strategies such as the Discussion Web and the Academic Controversy can also be used to facilitate debate.)

3. Students are then given five minutes to write their individual positions on the topic. This first statement of their position, together with later illustrations and clarifications, will become the first paragraph of the argumentative essay. (Double spacing is recommended, to leave space for further annotations.)
4. Students group themselves in pairs and read their paragraphs to each other. Each listener must first restate the other's position, then tell the writer what evidence he would require to be convinced of this position.
5. Following this exercise, students are given 10 minutes to write down their arguments. (Again, these should be double-spaced to allow for later additions or changes.)
6. Students then read their entire essays to their partners. The partner again restates the author's position, this time including the arguments and the conclusion.
7. Taking into account their partner's response and suggestions, students take 10 minutes to revise their papers, to more effectively express their positions. Students are reminded to try to state their arguments concisely



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and make the conclusion worth remembering (Steele, Meredith, & Temple, 1997).

The examples selected for analysis and excerpted below are from students in a 3rd grade Science class and a 5th grade Geography class in Sibiu, Romania. The science teacher (G.M.) and the geography teacher (B.E.) had attended a course on the development of critical thinking in the RWCT program and afterwards were mentored for one year.

For the 3rd grade Science class, the controversial topic for the essay was: *Is man a superior being?*

After analyzing the essays, we noticed that the *pros* prevailed, with the majority of the students contending that humans are indeed superior beings. The students succeeded in generating a variety of logical arguments, many of them quite sophisticated; they also demonstrated a capacity to consider opposite points of view. We identified three types of arguments and categorized the essays accordingly:

- **Generally accepted arguments.** Man works; thinks; communicates; is endowed with feelings.
- **Special arguments.** Man studies nature and attempts to decipher its mysteries; uses these nature studies to make his life easier; establishes a family, raises and educates the children; invented all the technologies we use; engages in research and seeks to advance knowledge; creates things that have practical uses.
- **Profound arguments.** Man can influence and control other beings; distinguishes between good and evil; can affect the environment in a positive or negative way. Through the centuries, humans have modified their surroundings to meet their needs. Man is the most evolved mammal living on this planet.

In some students' essays we also encountered ideas that, without necessarily representing valid counterarguments, proved that they did indeed think about the opposing point of view, that they did not simply accept a given opinion. Thus, they give consideration to the notion that while humans in general might be judged to be superior beings, there are also exceptions. The following reasons were given:

- *Many humans do not think and do not work, so they cannot be considered superior beings.*
- *Not all humans are superior beings, because some of them do wrong things (they steal or kill), which makes them closer to animals.*
- *There are some human beings who are*

born with mental disorders, and because they cannot think, or understand others, they cannot be considered superior beings.

These students' observations are pertinent and are rather impressive considering the level of intellectual development of 3rd graders. Two of their responses are quoted below, to provide a fuller picture of the nature of their arguments:

- *A being who appeared millions of years ago, man is the most evolved being on Earth. As opposed to all the other beings, human beings are endowed with thinking, and are able to distinguish between good and evil, which makes for a net superiority as opposed to all the other beings. Man thinks, communicates, works, is endowed with feelings, can be happy or sad. All these cannot be accomplished by other beings. Man can influence the environment, either in a positive or in a negative manner. (C. A., 3rd grade)*
- *Man is a superior being because he can talk and think. Humans can communicate, learn, read, write, invent. Man is a superior being because, as opposed to the other living beings, he can be distinguished through: the food he eats, the houses he builds, his behavior and his clothes. (S.M., 3rd grade)*

The teacher, G.M., noted in her journal that *the students work in pairs, read, listen to, help each other to improve their work, (...), include annotations and clarifications in the blank lines, express their opinions, mentioning what they liked and why.* These outcomes can be considered effects of the promotion of reflective writing.

A challenging topic was assigned to the 5th grade students by B.E., the Geography teacher: *Can Romania enrich itself by means of tourism?* Here again, students were first invited to respond using the Value Line strategy.

To begin the lesson, students were asked to think independently about the given topic and attempt to shape their answers. Then, at the teacher's request, they placed themselves on the imaginary Value Line according to whether they agreed with the statement, disagreed, or were indecisive. Thus positioned, they discussed their positions with their classmates and offered their arguments for and against. In the course of their discussions, as they developed, defended, and reformulated their arguments, students changed their locations in line, whenever a classmate's argument persuaded them to do so.

The next step in the process was for the students to reconsider and edit their initial essays. Later analysis of these essays, using the criteria of the Toulmin argumentation

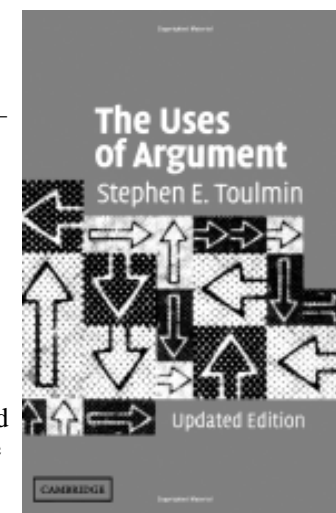
model (Toulmin, 1958), demonstrated that:

- Students respected the central idea or *claim*—they did not deviate from the given topic, nor did they distort it.
- Students elaborated their points, offering examples and *data* about the tourist areas in Romania, the state of historical monuments, the services and facilities offered at the spas, access to these attractions, etc.
- Students outlined the *warrants*, noting for example that the tourist potential of the country depended upon its natural resources being appropriately valued and protected.
- Students provided the *backing* for their warrants to support their claims: For example, attention would be needed to preserve the cleanliness of the environment; "green" areas would need to be improved; monuments renovated, roads reconstructed, transportation and trade developed, etc.
- The use of *modal qualifiers* was limited: Very few students made reference to the potential role schools might play in making tourism a successful venture.
- The *rebuttals* expressed varying degrees of pessimism, ranging from *lots of money is being invested and it is difficult to recover this investment* and *the prices demanded by the Romanian tourism industry are inappropriate in view of the services offered*, to the strong assertion that *the money ought to be used in industry/agriculture/other areas that are more important and more useful than tourism, and more new jobs should be created.*

In the *Students' Reactions and Other Observations* column of her teacher's reflective journal, B.E. observed that the students were highly active, listing their opinions in their copy-books, reading them to their friends after class, showing support for their chosen argument and trying to persuade others of their position, formulating counterarguments. She also noted that students were serious and interested in the discussion.

Five-minute essays

For the 4th grade students, reflective writing took the form of five-minute essays. The



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teacher, S.F., wrote in her own journal for the Social Studies course that, through writing five-minute essays, the students *manifest their subjectivity, exteriorize their feelings and gain confidence and courage*. After reading these short reflective pieces bearing the title “Friendship,” we noted that students approached the given topic from several perspectives, expanding outward from the central pragmatic dimension to philosophical/religious and aesthetic ones:

- *A friend in need is a friend indeed, and true friendship is never forgotten!*
- *Friendship—it’s difficult to fathom. Understanding all its mysteries is a hard thing to do. A friend must respect you and you must also respect your friend!*
- *Friendship is like one heart shared between two persons; therefore friendship means feeling with someone else’s heart!*
- *Friendship—it’s a good thing, because without it, harmony would not exist, harmony among humans, birds, animals and other beings inhabiting this Earth. God created friendship in order to bring peace to the world!*
- *What is friendship? Friendship is the root of kindness; it is a gift from God. Friendship is the nicest thing on Earth! Regardless of race or skin color, if someone is suffering, you must be his friend!*
- *If we have friends we are rich. Friendship is our joy forever. It is a gift. You are richer when you have someone to love, and someone who loves you!*

The teacher S.F. commented, *After thinking over these essays and evaluating them, I was able to treat students as individuals, to avoid pigeonholing them*. Stimulating the students to express their opinions and points of view, provoking them to take part in debates with philosophical connotations, right from the very early school years, fosters the development of students’ thinking, language, and their socialization as citizens in a democracy.



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Students’ journals

For the 6th graders, we have selected a few impressions from a Physics course taught by R.A., expressed in form of a student’s journal. Filled in either at the end of each lesson or periodically, the students’ journals reveal a range of thoughts, feelings, observations, and assessments that teachers can value and apply to future lesson planning:

- *It was a little complicated, yet enjoyable, because thinking was involved.*
- *I liked it because I could measure, apply, explain and associate, and describe the results.*
- *I felt challenged and involved, and I understood how to calculate a body’s dimensions.*

The lessons that benefited from the students’ direct involvement, lessons that allowed them to interact with their classmates, with the teacher, and with the subject of study, often led to unexpected and positive surprises, to unanticipated satisfactions, and to the expression of new challenges.

Conclusions

In this study, students aged 8–9 and 12–13 were quite capable of handling the assigned communication tasks. Yet too often students are not given sufficient opportunities to explore and exploit their oral and writing abilities during class activities. Therefore, as teachers, we must work to ensure that they feel comfortable in collective situations; in group discussions; to use the words and the arguments needed to express themselves; to explain their point of view or to persuade someone; to express actions, wishes, or emotions.

Reflective writing in the early school years offers students a chance to better identify the purpose of schoolwork, the long-term goals that underlie the day-to-day learning tasks. This understanding is best achieved through complex learning tasks designed to raise students’ interest and encourage reflection. By encouraging reflective writing, teachers can help students learn how to use oral and written expression as a means to their own acquisition, generation, and critical evaluation of knowledge.

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Daniel E. Chapman

The Curricular Compass: Navigating the Space Between Theory and Practice



Photo from the author’s archive

Daniel E. Chapman is an Assistant Professor in the Curriculum, Foundations, and Reading Department at Georgia Southern University, United States.

At its core, education is a social act, or a series of acts, believed to improve today and create a better tomorrow. The curricula we choose to espouse and use reflect what we think can be done today to create a better tomorrow. They speak to the way we perceive the nature of the world, the nature of knowledge, and our power to intervene and transform society. Of course, the vision of what makes a better tomorrow is highly controversial. And there is yet another dispute between those who agree on a vision for the future but disagree about how to get there. However, what I am interested in for this paper is the situation in which people claim to agree with a desired vision—and even to agree on the way to get there—and yet I see a wide divide. In particular, I am talking about progressive educators whose practice is rooted in critical thinking, dialogue, and democracy. I have often found myself wholeheartedly agreeing with a particular educator’s assessment of the state of education, and yet when it comes to curricular remedies, I find myself disappointed by that person’s suggestions. It seems that the path between theory and practice is far from direct. There is a space between naming the world and acting in the world that is treacherous to navigate.

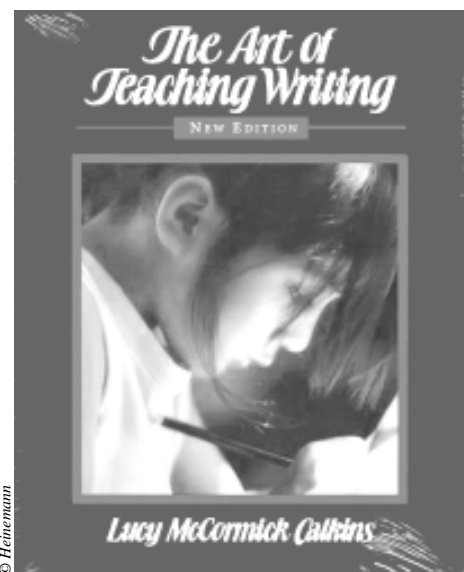
I will begin by situating my own understanding of critical thinking and the ways it can affect students’ lives and society. I will then propose a set of questions, which I call the Curricular Compass, that I ask of any curriculum, be it someone else’s or my own, to determine whether it reflects my vision

and values. Then, I will demonstrate how I use the Curricular Compass by examining two progressive lessons.

Frederic Nietzsche, in *Thus Spake Zarathustra*, offers us a simple, yet rich metaphor for education. Nietzsche spoke of three metamorphoses: The spirit turns into the camel; the camel into the lion; and the lion into the baby. The spirit becomes a camel when it receives historical and cultural information that has been passed down from one generation to the next. The camel changes into the lion by attacking these long-standing truths and values. The third metamorphosis turns the lion into a baby, which begins anew and creates information and values.

This image is a good starting place to situate my own insights into the nature of learning, and how critical thinking can be a part of this process. Becoming educated involves taking in information, deconstructing that information, and creating new information. However, education does not occur a linear way, from spirit to camel to lion to baby. Dennis Carlson explains, “Education, rather, proceeds by moving from one to another attitude or stance, and circling back over these attitudes again and again” (Carlson, 2002, p. 108). The different stances occur concurrently and quite unpredictably. While the notion that you should not form an opinion until you have the facts is common wisdom, people of just about any age and educational background can and do form opinions, with or without facts.

Our elementary and secondary school systems, for the most part, recognize only the camel, the taking in of information and values. This is what Paulo Freire has called *banking* education, where knowledge is deposited into students, and the goal appears to be creating docile citizens for the future. Certainly, the lack of critical thinking on the curricular level in most schools is indicative of this philosophy. Any prior knowledge that students bring into the classrooms is discounted, and so are any questions they may have about the content or the methods.



Deconstructing and creating are marginalized and devalued.

While my thinking about the theories of schooling has been shaped by many critical theorists, such as Freire and Carlson, Lucy Calkins stands out among these influences with respect to the possibilities in the classroom. Rather than focusing her vision of education and society on the political (she never even mentions democracy), Calkins focuses on the need for meaning:

As human beings we have a deep need to represent our experience. By articulating our experience, we reclaim it for ourselves. ... This is why early peoples inscribed their stories on stony cave walls with pictographs ... It is why my four-year-old son, Evan, uses magic markers, pens, lipstick, and pencils to leave his mark on bathrooms walls, on the backs of old envelopes, on his brother's charts and drawings ... As John Cheever explains, "When I began to write, I found this was the best way to make sense of my life."

(Calkins, 1994, pp.8-9)

Calkins has developed a Writing Workshop that places students' interests and their need to create at the center of the curriculum. By designing classroom structures that reflect how authors create texts, she allows students to bring their own passions, histories, and interests into these structures. The central feature of this classroom is the writer's notebook, in which students' consistently, but informally, record their observations and thoughts. After collecting many entries over a period of time, a student chooses one idea or one memory to develop into a formal piece of writing, be it a story,

an essay, or a poem. After going through several revisions and edits, students are given time to consider the work they have done and present it to an audience. Presentation can be in the form of a school-wide reading, posting the work in the hallway, posting it on the Internet, or printing a collection of stories to hand out to other students, parents, or people in the community. It is important for the writers to know that there will be an audience at the end of the process, because they will care more about their writing when it is in fact a form of communication, and not just an exercise to receive a grade.

Embedded in these classroom procedures is a balance of gathering knowledge, deconstructing knowledge, and creating new knowledge. While human beings have a deep need to represent our experiences, writing is only one of many ways to do this. Some people desire to represent their experiences through histories, sciences, mathematics, or various forms of art. These endeavors are also ways into the eternal questions of who we are, what the world is, and how we can live lives filled with purpose. I have faith that all of these forms of knowing address deep internal needs. We do not engage in them merely to acquire a financially sound position in a globalized economy. These forms of knowing have been around for millennia, within many different cultural and political contexts. During my teacher training studies, I have asked myself how the structures of the Writing Workshop could be adapted to the various academic disciplines.

There are several interpretive gaps that make it difficult to navigate the move from articulation to actualization. There is the gap between theory and practice; there is the gap between the nature of knowledge and the disciplines we have created; and there is the gap between the political and the personal. The Curricular Compass helps me bridge these gaps to make sure that my practices reflect my values. Today, in the U.S.A., standardized testing serves as the schools' compass. If the test scores are high, the teacher is considered effective, the students intelligent, and the curriculum good. However, such tests only measure how much information students can remember on a particular afternoon, and not their ability to challenge information or create new information. To evaluate these qualities, we need a more complex guide for processing the learning environment. The Curricular

Compass is a series of questions I ask of any curriculum to make sure the practices reflect what I value in education. The following are the questions I ask at this point in my career. They will probably evolve as my thinking about education evolves. I encourage other educators to adopt or adapt these questions to reflect their own values.

1. Does the curriculum reflect how producers of knowledge create?

There are intrinsic reasons beyond ego and economics that explain why people engage in intellectual pursuits. Humans have used these activities to make meaning for centuries, throughout the world. Producers of knowledge, both amateur and professional, gather information and deconstruct that information in order to generate new information. By examining what historians, writers, scientists, artists, and mathematicians do, and the reasons why they do it, we can adapt their activities to the classroom and inspire students' meaningful engagement with the world.

To use the example of authors, I do not know of any who write five paragraph essays about pre-assigned topics, unless they are in a classroom. Similarly, I do not know of any scientists who follow outlined steps to achieve a prescribed result. But this is exactly what students are required to do in many science classrooms. This approach is appropriate when following a recipe or hooking up stereo equipment, but it is not a scientific experiment. Just because students don lab coats and pour liquids into beakers does not mean they are doing science.

Many producers of knowledge, whether they are authors, scientists, or mathematicians, keep notebooks of their observations. They prioritize their own and others' questions. They engage in research, they make predictions, they change their conclusions, and they comment on others' conclusions. Activities in the classroom should reflect the kinds of activities actually engaged in by producers of knowledge.

2. In what kinds of thinking are the students engaged?

The intention of this question is to recognize assignments that are meaningless busy work. Rather than focusing merely on the stated objective of the task, I turn my attention to how the student is engaging with the world. While students may look like scholars, quietly hunching over their books, they may only be following orders

and directions given by the teacher. Suppose, for example, that they are copying definitions or scanning the text for answers to a comprehension quiz. Physically, these activities may look like scholarly work. However, mentally, they are not. Are students creating original stories or new experiments? Are they synthesizing two opposing ideas? Are they following step-by-step directions from a book or are they following their own directions? Are they watching a teacher model for them or are they actively engaged in an activity?

This last question, about teacher modeling, has been particularly useful to me because I often see teacher modeling substituted for student engagement. For instance, a teacher may model critical thinking and then claim that students have learned how to think critically. However, if we turn our focus to the students and examine their thoughts, we realize they have only observed the process. They have seen someone engage in critical thinking and name it as such, but they have not engaged in critical thinking themselves. It is often important for a teacher or facilitator to name particular phenomena, and it is often important to present examples and models to students. Both of these activities present substantial pedagogical opportunities. But they should never substitute for having students engage in the activity. Modeling only encourages the student to gather information. It does not necessarily encourage the student to deconstruct or to create new information.

3. Are the questions more important than the answers?

Questions initiate creation. Histories, stories, mathematical problems—they all begin with questions. If a curriculum is focused on answers, it will probably be oriented to the student as receptacles of information. If the questions are more important, then the curriculum probably





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provides room for students to challenge and create knowledge. Questions also introduce the possibility of connecting the classroom to other parts of their lives. Thought-provoking questions often follow students outside the confines of the school walls. Students will not likely think about the fact that the French Revolution began in 1789, but I can imagine them wondering about questions surrounding the nature of power.

4. Do students' questions influence the curriculum?

Gathering information within the context of their own questions makes information more meaningful for students. Calkins says, "We care about writing when we write with, for, and about the people who matter to us, and when we write about or 'off of' the issues and experiences that matter to us" (Calkins, 1994, p. 14). Providing a structure in which students ask and answer their own questions allows them to engage with the world through self-motivated inquiry. For me, this should be the defining process in student-centered education, rather than referring to methodological adaptations for individual learning styles. This latter definition, more common in my observations, still retains the assumption that the goal of education is to fill students up with particular bits of information. Often, focusing on individual learning styles only challenges the methods, not the basic goal. Rather than seeking strategies that assist in memorizing information, I try to create experiences of struggle and doubt, where I can provide students with support but not a definite answer. To my mind, these experiences may be in themselves the best education a student could have.

5. Can the structure of the classroom be consistent?

When we think of the places where creation typically occurs—artist studios, laboratories, workshops, and libraries—they are all consistent environments. A consistent environment is not the same as the sterile, bureaucratic environment that one finds in schools, prisons, hospitals, and corporate cubicles. Yes, these environments are consistent, but they are not typically places of creation. One point of this question is to steer away from the "education should be fun" model. In this model, learning is dependent on the teacher's skills as an entertainer. The energy, excitement and unpredictability in the classroom should come from the searching and thinking that students are involved in, and not from the teacher's attempts to cajole. Calkins (1994) reflects upon her own early teaching experiences:

I spent most of my time conjuring up motivating activities, all based on the assumption that my students would write only if I jump started them. Now I believe that this is a devastating assumption for a teacher of literacy to hold. We cannot teach writing well unless we trust that there are real, human reasons to write. (p. 12)

If the teacher does something different every day, students may enter excited to see what the day's lesson will bring, but they will not enter with their own possibilities. They are positioned as an audience that consumes information, rather than as scholars who create. A consistent classroom allows students to pursue their projects in an environment that is ongoing and stable. They can formulate ideas about their projects outside of the classroom and then put those ideas to use inside the classroom. If, on the other hand, students do not know what to expect from day to day, then there is no use or value to them in thinking about their projects beyond the classroom walls. This is not to say that the teacher should never change the pace by doing something different, or going somewhere different. Perhaps the first ten minutes of each session can be a time for the teacher to provoke and cajole. But the typical day should include a predictable amount of time that allows students to explore their own questions.

These are the five questions that make up the Curricular Compass, as I have articulated it. They help me begin my consideration of the theories and practices expressed in the curriculum, overtly and covertly. By way of example, I would now like to show how the

Curricular Compass could be applied to two progressive mathematics lessons. I use math lessons because learning mathematics is most often thought of as memorizing rules and formulas to achieve predictable answers. The creativity and the aesthetics of mathematics are often forgotten. However, it is these qualities that are front and center for many mathematicians. In Paul Hoffman's book, *The Man Who Loved Only Numbers*, he says, "For [mathematicians] mathematics is order and beauty at its purest, order that transcends the physical world (1998, p. 31)." In fact, in the International Mathematical Olympiad, the judges take into account the aesthetics of the solution when determining a competitor's score.

Brent Davis (2000), in *Engaging Minds*, describes a third grade math class doing a unit on fractions. Each child had two pieces of paper and folded each of them in half, one lengthwise and one widthwise. He asked, "Do both halves [the one formed by the lengthwise fold and the one formed by the widthwise fold] have to be the same size? How would you prove it to someone who did not believe you?" The class figured out that they had to be the same size, and the students decided that if you cut the halves into quarters you could rearrange the pieces and show that the two halves are the same size. Davis then asked the students for different combinations of fractions that add up to one. Some students decided to fold the sheet of paper in different ways and others decided to make numerical charts. Davis presented the numerical charts to the class, and other students were inspired to build on that idea. One student began including negative numbers in his chart to create fractions that equaled one.

When I applied the questions from the Curricular Compass to this lesson, I concluded that this curriculum respected students as gatherers, challengers, and creators of information. While the students did not create the original logic problem, they answered it in many different ways. Their responses to other students, and to the questions themselves, shaped the direction of this unit on fractions. Their classroom activities mimicked the way mathematicians share information. While the mathematical answer, *one*, was important, the focus was on discovering different ways to arrange fractions equaling one. I would certainly appreciate seeing a way to engage students with their own questions, but overall, this

curriculum provides space for the three metamorphoses to occur.

As a second example, I will use Eric Gutstein's (2002) project "Driving While Black/Driving While Brown: A Mathematics Project About Racial Profiling." This project attempted to teach students about mathematical ideas of expectation and theoretical probability.

If 30% of drivers are Latino, we would expect 30% of all random stops [by police] would be of Latinos—but only in the long run. This does not mean that if police made ten stops and five were of Latinos that something is necessarily out of line, but it does mean that if they made 10,000 stops and 5,000 were of Latinos that something is definitely wrong.

Students compared actual data from random traffic stops with the theoretical expectations. Using graphing calculators (with random number generators) and population numbers, they calculated the expected percentages of stops for different ethnic groups. Afterwards, the students reflected on what they learned. Most concluded that the police were being racist, while some did not. Gutstein himself reflected that a weakness in the project was insufficient analysis of the complexities of racism.

When I applied the Curricular Compass to this lesson, I did not get a vision of students as gatherers, challengers, and creators of knowledge. Perhaps the students were led to reflect on the fairness of police profiling, but the teacher did most of that deconstruction prior to the class. The answer—the injustice of racial-profiling in the police department—was given much more importance than any question students may have raised. Students were not given the opportunity to create their own mathematical problems and solve them. In fact, if they challenged the prescribed



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answer, they might undermine the point of the lesson. While they were doing arithmetic, they were not reflecting on their arithmetic. This lesson may provide an example of how policy analysts can use and manipulate numbers, but it is not an example of how mathematicians think about mathematics. The intent of the lesson was to use mathematics to reveal a social injustice, not to empower students to seek information on their own. While I see students gathering information, I do not see them deconstructing or creating information.

While the goal of raising students' class and race consciousness is important, it seems misapplied here. Approaching mathematics as a way to explain reality is a distortion both of the aesthetic thrill of mathematics and of reality, as well. To quote Albert Einstein, "As far as the laws of mathematics refer to reality, they are not certain, and as far as they are certain, they do not refer to reality." The lesson, "Driving While Black/Driving While Brown," reinforces the notion that this world can be accurately quantified, rather than problematizing that notion. In this lesson, the overt goal is to liberate students from distortions generated by the powerful to justify inequalities; a laudable goal, to be sure. However, the covert messages still reveal a modernist paradigm: Reality can be quantified, and authority figures are necessary to interpret information.

Conclusion

Often, teaching practices that are derived from the same theories look quite different, and it is the assumptions and interpretations that lie beneath the pronouncements that account for the difference. I am reminded of an argument that erupted in my Philosophy of Education class. We were reading Paulo Freire's *Pedagogy of the Oppressed*, specifically the quote, "Knowledge emerges only through invention and re-invention, through the restless, impatient, continuing, hopeful, inquiry men pursue in the world, with the world, and with each other" (1970, p. 72). The argument turned on whether the knowledge that emerges is stable or not. In other words, did Freire mean that knowledge is a solid entity, shrouded by diversions and myths, which can only be discovered through restless inquiry? Or, did Freire mean that knowledge itself is unstable and is continually reinvented through restless inquiry?

When I interpret the quote according to the second premise, it is incredibly meaningful to me. However, if I try to substitute the concept that knowledge itself is stable, the quote immediately appears useless to me. We may say the same things, we may draw from the same words, and yet we may still disagree on fundamental points.

It has been suggested that education, as a social act to create a better tomorrow, represents hope. I would like to propose that curricula represent faith. In other words, we put faith in what we do today, our practices, to achieve a better tomorrow. While I was writing this paper, the question arose, "In what do I put my faith?" Do I put my faith in reason, i.e. in the notion that if I come up with the best logical argument, the world will be a better place? Do I put my faith in knowledge, i.e. in the idea that if only people knew certain things (particularly things that I know), the world will be a better place? I do not want to take away the importance of reason and knowledge, because I believe they are both useful in creating a better world. But, at the end of the day, I try to have my faith focused on people. For me as an educator, this translates into subjecting all knowledge to investigation, challenging that knowledge from numerous strategies and points of view, and exposing students to many methods of creating new knowledge and new meanings. And with those tools, equally distributed, I have to have faith that people will create a just path.

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Ruthanne Tobin and Alison McInnes

Meeting Many Needs: Differentiated Instruction in Language Arts Classrooms



Photos from the authors'

Ruthanne Tobin is Assistant Professor in the Department of Curriculum and Instruction at the University of Victoria in British Columbia, Canada.



Alison McInnes is Assistant Professor in the Faculty of Education, at the University of Windsor, Canada

Morgan is a very bright, talkative third grader who reads voraciously. She finds some of her class work interesting but often sits idly waiting for others to grasp concepts she already knows.

Mathew is a gifted 8-year-old with a learning disability. He receives three hours of pull-out support each week. His written responses to his in-class readings total two to three sentences at best. He is most engaged when he creates elaborate drawings of comic book heroes.

Kelly is a talkative 7-year-old who loves to learn but finds it very difficult to stay organized. She frequently loses her school belongings, including her home reading books, and often arrives at school a half-hour after her language arts block has started. She has few reading opportunities in her home community and is a reluctant reader and writer.

Sindu joined her Grade 2 class shortly after arriving from Pakistan three months ago. She is participating in the school's ESL program three afternoons a week, but the rest of the time she sits quietly and prefers to work alone. Her English language assessment results place her at a beginner level in English, but information from her former school in Pakistan assessed her above grade level.

These students are typical of the academic, linguistic and cultural diversity that many Canadian teachers see in regular classrooms on a daily basis. Instructional differentiation in the regular classroom, particularly in language arts, could make a critical difference in the lives of these students and others

like them. In fact, Singer and Donlan (1989) estimate that a reading-ability span in a typical classroom would be two-thirds of the average age of the students; in a typical class of 7- and 8-year-olds, a teacher could expect a four to five year range of reading levels. Additionally, if the classroom teacher doesn't know how to deal with Mathew's learning disability and his advanced ability, his gifts may never be developed fully, and both are likely to focus more on what he can't do than on what he can do (Baum, Cooper, & Neu, 2001). Sindu, despite her ESL support time, still spends most of her day in the regular classroom and requires materials and instruction that take into account her high conceptual knowledge and her low English language level. Kelly's reading fluency is unlikely to improve without connecting her with interesting books at the right level. As a voracious reader, Morgan also needs a robust literacy curriculum. Morgan, Mathew, Kelly, and Sindu all need a classroom in which the language arts curriculum and instruction are modified to meet their needs.

Teachers in many countries are increasingly responsible for providing well-differentiated instruction within their classrooms for learners with diverse abilities. In response to this need, Aberdeen school district (pseudonym) targeted 13 mixed-grade classrooms (11 with grades 2/3 and 2 with grades 3/4) for research on a professional development project on differentiating literacy instruction. In this article, we report on three aspects of this study: (1) the profile of one teacher's successful

experiences with learning to differentiate instruction, (2) the assessment of the development of teachers' differentiated practices and self-efficacy; and (3) the difficulties the teachers encountered in acquiring the skills of differentiation.

What is differentiated instruction?

Differentiated instruction (DI) involves adapting the content, process, or products of instruction to meet the needs of individual learners (Tomlinson, 1999; 2003). *Content* refers to the objective of the instruction (e.g., knowledge, skills), whereas *process* refers to factors such as how the lesson is presented, the activities the teacher chooses, and/or the process through which the student learns. *Products* refer to the work that the student produces. In differentiating, the teacher flexibly applies a range of strategies to one or more of the three components—content, process, and product—in order to facilitate student learning and progress. This model is particularly applicable in the language arts classroom to accommodate diverse literacy backgrounds and competencies (Tobin, 2005).

What drives differentiated literacy instruction?

The theoretical framework that drives differentiated literacy instruction focuses on *responsive* literacy teaching, which plays a critical role in the success of diverse learners (Mathes, Denton, Fletcher, Anthony, Francis, & Schatschneider, 2005; Vaughn, Bos, & Schumm, 2000). Responsive literacy instruction focuses on a type of cognitive apprenticeship to model, guide, coach, scaffold, and fade strategies and prompts to accelerate independence, while the students read and write authentic texts. The teacher responds to the observed needs of students, attending to the constructions that each student is forming,

and responds contingently through scaffolding (Mathes et al., 2005). Ultimately, students are enabled to apply literacy strategies independently.

Another underpinning of differentiated instruction is the use of a variety of organizational formats. It is the small grouping and individual context in which optimum reading and writing behaviors are most likely to occur (Greenwood, Tapia, Abbott, & Walton, 2003). Flexible small groups and a focus on student interest have been shown to maximize acceleration of reading skills (Cunningham, Hall, & Defee, 1998; Vaughn, Linan-Thompson, Kouzekanani, Bryant, Dickson, & Blozis, 2003). Reading behaviors occur most often in the presence of peer tutors, reading partners, or teacher-led one-on-one, small-group, or independent instructional arrangements as opposed to entire group, teacher-led instruction (Greenwood et al., 2003). This critical combination of responsive literacy teaching and the use of a variety of organizational formats forms the backbone of differentiated instruction.

Overview of project and objectives

Between January and June 2006, a group of 13 teachers of mixed-grade classes (grades 2/3 and 3/4) and two special education teachers from a small urban school district in eastern Canada participated in a collaborative project with two university researchers. The project was designed in partnership with the school board to (1) assess teachers' current use of DI practices in language arts, and (2) provide professional development, consisting of workshops along with regular in-class mentoring support.

Teacher participants

All 13 teachers (12 female; 1 male) volunteered to participate. Approximately 50% of the group had more than 10 years' teaching experience with most of the remainder of the group having between 1 and 5. One participant had special education qualification.

Model of professional development

The professional development program was an embedded support/mentorship model that involved a series of three workshops on differentiated instruction, plus ongoing in-class teacher coaching provided by two teachers certified in special education. Such an approach to professional development is highly effective in enabling teachers to reflect on and adapt instruction (Boyle, While, & Boyle, 2004; Brownell, Adams, Sindelar, Waldron, & Vanhover, 2006; Kelly, 1999).

The goals of the workshops were to assist teachers in developing a framework for thinking about instructional differentiation; and to provide teachers with materials and strategies. A key emphasis was placed on meaningful reading tasks, flexible grouping, and ongoing assessment and adjustments for all students. Teachers were introduced to the practice of using a variety of texts with struggling readers, emphasizing word study strategies, increased opportunities for repeated readings to build fluency, and more systematic instruction in comprehension strategies. In addition, teachers reviewed guided-reading practices and management procedures.

Methodology and data collection

The study was designed to address two key research questions: (1) In what ways did participating teachers differentiate instruction in language arts at the outset of the project? and (2) To what extent did teachers implement differentiated practices into their classrooms in response to professional development in this area?

At the beginning of the project, data collection focused on self-reports of teachers' current practices in DI, and self-ratings of their effectiveness as teachers. During the January–June time period, classroom observations, in-depth teacher interviews, and videotaped sessions were gathered to determine how the teachers were implementing and responding to specific DI workshop and coaching activities. At the end of the five-month period, participants repeated the two checklist surveys administered at the outset, and also completed a brief evaluation of the project. In addition, videotapes of DI were analyzed for recurrent themes in developing DI practices. Data focused on determining whether and how teachers had developed more responsive literacy teaching through the use of a differentiated model.

Measures

Measures comprised brief checklist inventories¹ and an efficacy scale² regarding current practices and perceptions related to DI,



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in-depth taped interviews, and teacher reflection regarding implementing DI. In addition, three systematic classroom observations of language arts lessons were carried out by university faculty, two of which were videotaped.

Successes

Classroom observations provided the most compelling evidence of teachers' successes and challenges with implementation. Four of the teachers were highly successful in capturing the overarching concepts behind differentiated instruction. Six of the teachers focused mostly on discrete strategies, with less attention paid to the distinct needs of struggling students. Three of the teachers acknowledged the need for differentiated instruction, but researchers' visits to their classrooms did not uncover substantive differentiation.

In the following two sections, we profile a successful differentiator, typical of the first group, in order to provide a concrete example of effective implementation. Next, we report on our findings regarding teachers' increased use of differentiated strategies and self-efficacy ratings. Finally, we highlight the skills of differentiation that many teachers found particularly challenging.

The successful differentiators shared some key characteristics. First and foremost,

¹ A checklist, adapted from Tomlinson, Moon and Callahan (1998), which was completed at the beginning and end of the project.

² Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001—long form), completed at the beginning and end of the project. Teachers rate their own effectiveness in areas such as classroom management, student motivation, responding to behavior difficulties, encouraging critical thinking, promoting comprehension and creativity, etc. The guiding question for each of the 24 individual questions is *How much can you do?* A 9-point Likert scale is used to rate responses, ranging from *nothing to very little to some influence to quite a bit to a great deal*.



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Margot's classroom: Quality text and a menu of work products

[In my classroom] children are all over the place, sitting on the desks, some are focused over there [on the carpet]. The thing is, I get them talking as much as possible, they're all working with books and I get them to help each other... They have lots of choices.

Over several years, Margot had collected over 300 books, many of which were second-hand purchases, while others were donated by parents. Under her guidance, students created, on a weekly basis, their own personal reading bundles. A *reading bundle* was simply a small individual collection of three to five books, both narrative and informational, kept in a cloth bag on the student's chair. Margot's teaching revolved around high-quality children's books, in which she would showcase a piece of text and then offer a menu of work products, some of which were differentiated through tiered activities (Tomlinson, 2001). Tiered activities focused all students on the same essential understandings or skills, but at different levels of complexity, abstractness, and open-endedness. By keeping the focus on the same activity, but

they readily grasped the connection between successfully differentiated lessons and ongoing assessment. Secondly, their students simply had more access to books, which provided more choice for students and played a central role in their learning. Thirdly, they focused on responsive teaching, student choice, and organizational variety. Below is a profile of Margot's language arts classroom, which gives a vivid picture of a successful differentiator in Grades 2/3.

Figure 1 Work Products		
Name	Description	Tiering
Character swapping	Students chose a character from each of two books to swap. Using sticky notes, they wrote two to four changes that would result from the swap and then shared their experiences with a buddy.	Students created a T-chart with the teacher to identify characters' similarities and differences, and to spur discussion of how changing these characteristics might affect a story's events and outcome.
Slice & Spice	Students "sliced" an interesting part of a familiar story chosen from their reading bundles. Using that excerpt as the middle part of a new story, they wrote a new beginning and a new ending, adding spicy details and two new events.	Each student worked with a partner and decided on a slice from a story both had read. They made a few notes and then audio-recorded their new story.
Masking Nothing But The Facts	During shared reading of an informational book, the teacher masked several key words that would lend themselves to further study. Students then inferred the meaning of these words from the context. Next, they had the option of researching and writing <i>nothing but the facts</i> about the key words on cue cards making them portable for paired sharings on Friday. These facts were gleaned from other informational resources in the class (Tompkins, 2003).	Students were given specific questions to guide their inquiry (e.g. key word <i>spider</i> : What does it look like? What does it eat? How many types are there?)
Talk Back	After introducing an informational book, students were provided with a photocopy of one page from the book with wide margins. They then used a series of Talk Back prompts to tell the author what he/she should have included that would have made it a better book. The final product was a shared writing of a letter to the publisher suggesting ways to improve this book.	Students also received a sheet with prompting questions for a <i>talk back</i> session with the Classroom Assistant.

providing different points of access at varying degrees of difficulty, the teacher maximized the likelihood that each student would be appropriately challenged. For example, in working with a read-aloud such as *Something from Nothing* (Gilman, 1992), some of Margot's students responded to the evocative pictures, and noted their responses in their own words or through drawings of some of their feelings. Students then discussed the reading in cooperative groups, using guiding questions to sequence the story events. Other students, who needed more explicit assignments, were given a repetitive verse from the story to aid in retelling the events, and were asked to modify the story by changing a single event. Still other students staged a tableau of a scene from the story. Providing a menu of work products along a continuum of complexity, focused on a key piece of literature and one or two essential understandings, resulted in high engagement in Margot's classroom.

With students engaged with a variety of work products, Margot worked to develop their skill and comfort with jagged time frames (students beginning and ending at differing times). Also, to support their learning, Margot used an *intentional traffic pattern*, checking in first with students she termed *reluctant starters* and nudging them along by scribing the first idea, or echo reading the first sentences. She also monitored students' comprehension by listening to them read selections from their bundles or from their own writings. To help them figure out unknown words, she encouraged re-reading of sentences and phrases, and motivated revisions of story predictions, as well as use of illustrations and phonological decoding. Students were also well acclimatized to *wrap-around activities*—interesting reading, writing, and representing activities that they could work on independently when they completed their work products.

Figure 1 shows some of the work products and tiering strategies that Margot provided for struggling students.

Although Margot's differentiation revolved around showcasing a children's book from her own classroom collections, other teachers depended on library books and boxes of books that were rotated among different classrooms. Of critical importance is not the number of books available, but the fact that students were given choices and support for their reading selections and for how they would connect and respond to text. Margot intentionally planned ways for

struggling students to receive the explicit scaffolding and comprehension monitoring they needed to understand how to use effective strategies.

Teachers' increased use of differentiated literacy strategies and self-reported improvement in self-efficacy.

Figure 2 describes the differentiated literacy strategies that were taught in the professional development workshops.

Over the course of the project, all participants reported increased use of the strategies. By the end of the project, participants applied, on average, about 3–4 strategies more frequently than previously, making a potentially significant difference in their practices in dealing with struggling students. Three participants incorporated 6–7 new strategies over the five-month period, which represented a significant change in their instructional practices. Other participants showed more moderate increases in their usage of differentiation strategies (e.g., *never used to weekly*).

Employing the strategy *peer tutors* appeared to have been an unused approach for most of the participants at the beginning of the project, but became a regular DI strategy for 11 of the 13 teachers, reflecting an increase in the organizational variety they used to facilitate literacy learning. Other strategies used more often at the end of the project were: *preassessing student knowledge* (six participants), *mixed ability flexible interest groups*, and *buddy reading*. Four participants reported increased use of strategies such as *tiered assignments*, *learning centers*, *flexible pacing*, and *remedial or advanced computer programs*.

At the beginning of the project, the participants' overall self-efficacy as a group, as indicated by the Teachers Sense of Self-Efficacy Scale, was generally quite high, with ratings spread between the mid-range (4–6: *some influence*) to the high range of self-efficacy (7–9: *quite a bit, a great deal*) for many of the items.



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Figure 2	Strategies Introduced during Workshops for Differentiating Instruction in Language Arts
Strategy	Description
Preassessing student knowledge	Facilitates the teacher’s ability to determine how to design the process and products of learning; a standard method in facilitating comprehension
Listening to stories on audio tape/CD	Reinforces oral language comprehension while supporting reading
Learning contract	A negotiated agreement between teacher and student that gives students some freedom in acquiring the skills and understandings that a teacher deems important at a given time
Tiered assignments	The teacher provides assignments at different levels of complexity, ensuring that all students will be able to produce a product from the lesson.
Breaking work into small parts	Breaking tasks into manageable chunks facilitates comprehension, productivity, and overall academic success.
Alternative evaluation approaches and non-print responses to text	Offering varied modes of expressing comprehension and learning (e.g., reenactment of story, tableau or “frozen” interpretation of a scene from the story, creation of a diorama, retelling of the story in picture form, or creating the characters in setting with playdough).
Literacy learning centers	Learning centers are classroom areas that contain a collection of ready-made, organized, and easily accessible activities and materials designed to teach, reinforce, or extend a particular skill or concept. Literacy centers are inviting places within the classroom that feature distinct areas for activities such as reading, writing, listening, and drawing, drama, word-making or word activities. A Literacy Center may feature children’s literature, workbooks, writing activities to complete, or art-based extension activities, including materials at various levels of difficulty to accommodate student readiness.
Specific literacy centers for at-risk or struggling readers	Specific classroom centers may be designed to address a specific area of skill development or to address the needs of a group of learners in the classroom who are still at an early stage of development of literacy skills (e.g., activities might address phonemic awareness, sound–letter knowledge, story structure).
Flexible similar-level reading groups/flexible pacing	Groups with similar levels of ability or readiness, formed for the purpose of teaching a mini-lesson in a basic skill, or to provide focused practice on a particular skill
Mixed-ability flexible interest groups	Heterogeneous groups that allow students to benefit from sharing their own experiences and to learn from others’ strengths
Remedial computer programs	A variety of computer software can be used to develop specific skills or to support writing and spelling.
Buddy reading/ mentorships	For at-risk or struggling students, the teacher explains and models the approach so that buddy reading does not turn into a situation where the stronger reader reads to the less capable reader, which is not the intention of this type of reading support. For example, students can take turns and help each other identify unfamiliar words, or take a few moments at the end of each page to talk about what they have read. Buddy reading is a valuable way of providing the practice that beginning readers need to become fluent readers.
Independent reading time / independent study	Independent study is a tailor-made opportunity to help students develop areas of individual talent and interest, as long as teachers understand that the independent study needs to meet students at their current readiness for independence, and move them toward greater independence a little at a time.
Provision of books at students’ assessed reading level	The teacher pre-selects books for students at their level, to facilitate independent practice at the appropriate level of reading.
Use of peer tutors for teaching specific strategies	Having selected students mentor students who vary in readiness regarding specific skills and strategies in reading or writing
<i>Note:</i> Strategies were employed according to the students’ needs and teacher preferences. Not all strategies were used by all students in a class.	

At the end of the project there was a shift toward higher ratings on items such as the ability to *adjust lessons to the proper level for individual students, use a variety of assessment strategies, help students learn to think critically, improve student understanding, and use good questioning techniques*. This shift suggests that teachers were engaged in more responsive literacy teaching. Interestingly, teachers’ self-ratings of their effectiveness in *adjusting lessons to the learner’s level, using a variety of assessment strategies, and helping students think critically*, still showed overall lower relative ratings, indicating a need for further support in these areas.

Challenges: Skills of differentiation that teachers found difficult

Many of the Aberdeen teachers struggled with some of the concepts and approaches to differentiating instruction. A description of these difficulties follows.

“But I’m already doing guided reading with my struggling readers.”

Many of the participants were using an approach known as guided reading with their classes, and felt that this strategy should be sufficient to support their struggling students. Guided reading sessions involve a teacher and a group of around six children, usually grouped by reading levels, and run for about 20 minutes. Whilst guided reading is taking place with one group, the remaining children are engaged in independent or group tasks. Usually a daily activity, it is scheduled so as to involve every child over the course of a week.

Teachers understood that students needed to practice reading on their level in order to promote fluency; however, they overused the leveled guided reading books, in many cases to the exclusion of other genres. What they needed from the support team, in some cases, was the opportunity to discuss the rationale for exposing students to a variety of texts at their level and beyond, as well as the tangible resources for doing so.

“I get them to draw a picture about the story setting or the events.”

Differentiating lessons so that all students were engaged in robust activities was a challenge for some teachers. For example, some teachers missed the critical point that effective differentiated instruction starts with high-quality lessons. DI has been found to be much more difficult and stressful for teachers to implement within traditional, passive models of instruction (Lawrence-



Brown, 2004, Vaughn et al., 2000), and they may resort to low-level activities that do not foster connections with critical concepts. For example, many of the teachers would have students draw a picture to connect with a story. While this type of activity can be a worthwhile response option when embedded within a carefully crafted literacy lesson, it was sometimes incongruent with the overall goal of the lessons (e.g. to have students develop their writing skills). Moreover, children become easily bored with the repetition of the same literacy activities. Teachers appeared to need more information and reflective coaching on teaching for thinking, and a broader range of sense-making activities.

“I just don’t know how to juggle all that. I have a hard enough time just managing when they’re all in their seats and I’m trying to do guided reading.”

Teachers spoke of the challenges of managing the class with multiple activities in play, while also delivering small group instruction. More discussion and reflective coaching about successful classroom management, in particular the tone, strategies, organization, and relationships that lead to successful engagement of students, was needed. Teachers also would have benefited from more exchanges of information with

colleagues who were successful differentiators, including both visits to their classrooms and the formation of DI teacher support groups.

“I’ve tried to do a lesson for the high group and the low group but I can’t do that every single time.”

Understanding the principles behind differentiation was challenging for some teachers. Some saw it merely as a replay of the old model of streaming the class into “smart” and “slow” groups, as opposed to a flexible, responsive approach. Reproducing ability tracking within the classroom was an unintended consequence of the change effort in two of the classrooms. Teachers needed opportunities to discuss the importance of attending to the individual learner, and responding appropriately. Also, emphasis needed to be placed on actively avoiding fixed groups, while still providing the benefits of small group instruction. This awareness would avoid problems associated with low expectations for students in the “slow” group.



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“Did you listen to the instructions?”

Teachers often underestimated the power of their own discourse and missed opportunities to support students. Typical among successful differentiators was a consistent acceptance that some students would need instructions told to them individually, or more than once, and that some students would need the first step modeled or scribed to get them going. Nudging students through validating discourse, assuming best intentions (“*I see you’re still thinking about what to put down first. How about...*”) seemed to produce better results than reprimands. Opportunities for these teachers to talk with mentors about the vital role of validating discourse in facilitating the literacy growth of at-risk students may have developed their awareness.

Summary

The overall outcome of this short-term professional development collaboration between a school board and a university Faculty of Education was positive in that it provided a learning experience that was valued by the teacher participants, and fostered their acquisition and use of new strategies in differentiation. All participating teachers made progress in the implementation of specific differentiated instructional strategies, and reported some increases in their own perceived effectiveness as teachers. The findings suggest that the strategies taught in the workshop were seen by the participants as useful additions to their teaching practices. Many of the teachers, however, clearly needed more mentoring support and hands-on experience in order to fully implement changes to their practice.

This study raises various considerations for classroom teachers (and those who work with them) with regard to assessing their own level of differentiation in language arts instruction. Successful differentiators had a strong sense of the essential understandings and skills that they wished to develop with their students, and used variations of their best literacy practices to scaffold instruction appropriately. In contrast, the teachers who experienced difficulties often did not have a clear sense of which skills or understandings they were trying to address; rather, they planned in terms of activities related to a topic or theme. As long as students were doing something related to the theme, they viewed the lesson as appropriately differentiated, with little consideration given to whether, or how, students were reaching particular outcomes or practicing targeted skills.

A limitation of this study was its relatively short duration. Teachers required more time to make sense of both the need for differentiation and the principles behind it. Researchers need to continue to seek ways to sensitize teachers to the challenges of teaching at-risk and struggling literacy learners, and to assist them in developing the skills and strategies to address these needs in the context of the dynamic classroom.

In conclusion, our findings offer several insights into teachers’ use of differentiated practices, which are currently a focus of educational policy in many jurisdictions, and into the pragmatic challenges of providing professional development resources to support teachers in adjusting their instruction and learning environments to meet the needs of individual learners. We adopted a collaborative approach to professional development, integrating the efforts of university researchers with those of the special education lead teachers and classroom teachers. In doing so, we not only shed light on the benefits of collaborative efforts, but also developed a detailed description of what an appropriately differentiated classroom might look like. Our results offer promise for a reconceptualization of the way teachers organize literacy instruction, and the way they address the challenges involved in implementing such changes.

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William G. Brozo
and Courtney Gaskins



Assessment for Learning:
Monitoring Student Progress
through Classroom-Based
Assessment

Teachers in many countries are familiar with broad-based, school-wide testing regimens. Typically, these tests are administered near the end of a school year to determine whether students have met certain achievement standards in reading, writing, and math. For classroom teachers, information of this kind often comes too late for them to provide extra or modified instruction for students who fail. In contrast to this approach, which has been called assessment *of* learning (Stiggins, 2002), assessment *for* learning is meant to help classroom teachers craft responsive curricula in an ongoing way, to

facilitate progress for all students. Ideally, assessment for learning occurs within the context of daily instruction and situated learning activities (Brozo & Hargis, 2003; Brozo & Simpson, 2007). This context allows for a range of classroom-based assessment options that can lead to ongoing improvement of the teaching and learning process.

What we know
about good assessment

- Viable and effective classroom assessment should be structured in ways that:
- help students take ownership of

- their understanding and become assessors of their own learning (Cook-Sather, 2002);
- promote critical thinking, meta-cognitive awareness, and confidence in one’s own competence, or self-efficacy, (Dweck, 1999);
 - help students and teachers reflect upon new understandings, and become empowered by the assessment process, rather than victimized by it (Tierney, 2000);
 - offer students ongoing reflections of their literacy processes (Clark, Chow-Hoy, Herter, & Moss, 2001);
 - are appropriate to students’ needs (Bauer, 1999);
 - are embedded within meaningful and engaging learning experiences (Shavelson, Baxter, & Pine, 1992).
- Three classroom-based strategies consistent with our best

thinking about assessment are the content literacy inventory (Brozo & Simpson, 2007), vocabulary self-awareness (Fisher, Brozo, Frey, & Ivey, 2007), and the cloze-maze approach (Taylor, 1953; Klare, 1984; Dubay, 2004). All three of these assessments are embedded in everyday instruction. Each offers teachers formative feedback on students, and offers students a mirror to the development of their knowledge and skills as they relate to specific classroom texts and content.

Content literacy inventory

This approach involves assessing students’ reading, thinking, and study processes using actual course texts. Content literacy inventories can be given to students prior to encountering new sections of text, to allow students to reflect on their developing skills and abilities, and to give teachers specific evidence for crafting responsive instruction to meet reading and learning needs (see example in Figure 1). For example, results that reveal an inability to summarize information, difficulties with understanding graphs and

charts, or a lack of study reading skills can be turned into teaching practices to address these specific challenges.

Vocabulary self-awareness

Because students bring a range of vocabulary knowledge to the task of understanding content, it is important to assess their knowledge of relevant words before, during, and after learning. This awareness is valuable for students because it highlights what they know, as well as what they still need to learn in order to comprehend the material.

The vocabulary self-awareness strategy begins by providing a list of key words to students before starting a new unit or topic. Students assess their own knowledge of these words using a chart (see Figure 2). Students should not be given definitions or examples at this stage. Instead, they are asked to rate their current understanding of each

word with either a plus sign (+) for *understand well*, a check mark (✓) indicating *limited understanding* or *unsure*, or a minus sign (–) meaning *don’t know*. Over the course of the unit, as students are exposed to the readings and other information sources, they should return often to the chart and add new information to it, filling in definitions and examples. The goal is to replace all the check marks and minus signs with plus signs. As students continually revisit their vocabulary charts to revise their entries, they have multiple opportunities to extend their growing understanding of key terms related to the topic.

The cloze-maze approach

Teachers can determine the ongoing needs and developing abilities of their students by administering cloze-maze passages constructed from the classroom materials students are expected to read

Figure 1 Sample content literacy inventory for a driver education text	
Using Book Parts	1. On what pages can you find information on smoking and driving? 2. In what part of the book can you find the meaning of kinetic energy?
Understanding Graphs and Charts	1. According to the chart on page 61, what is the second-largest cause of fatal accidents in rural areas? 2. What does the graph on page 334 imply about the relationship between speed and fuel consumption?
Vocabulary in Context	1. What does the word <i>converse</i> mean in the following sentence: Do not take your eyes off the road to <i>converse</i> with a passenger. 2. What does the word <i>enables</i> mean in this sentence: It <i>enables</i> you to carry out your decisions promptly and in just the way you planned.
Summarizing and Sensing Key Ideas	1. Write a one-page summary for the section entitled “A Defensive Driver’s Decision Steps” on page 101. Be sure to include the key ideas and any other pertinent information. Use your own words as you write your summary. 2. In your own words, state the key idea of the second paragraph on page 262.
Creating Study Reading Aids	Imagine that you will have a multiple-choice and short-answer test on Chapter 18. Organize the important ideas and details in that chapter to create a study aid for such a test.



Figure 2 Sample vocabulary self-awareness chart for a geology text					
Word	+	✓	–	Example	Definition
terra firma					
continental drift					
folding					
faulting					
earthquake					
volcanism					



(Madelaine & Wheldall, 2004). The cloze-maze task requires students to read a passage in which certain key terms have been deleted (Dubay, 2004). When students come to a deleted word, they must select the correct word from among three or more options. By administering cloze-maze assessments frequently throughout the school year, teachers can monitor students' progress, and adjust their teaching practices and strategies to address specific problems of students who fail to exhibit growth in comprehending classroom texts. At the same time, students can plot their own progress in correctly completing the cloze-maze passages. Figure 3 shows a sample cloze-maze assessment created from a science text, which requires students to circle the correct word in the numbered blanks. After

learning the material in a unit of study, students can create their own cloze-maze passages with key terminology deleted, to quiz each other as they prepare for tests and other classroom activities. In this way, students can monitor their own acquisition of important textual information.

A final word

When classroom teachers use assessment for learning, monitoring students' progress with actual course texts and material, many different assessment strategies are possible. Content literacy inventories, vocabulary self-awareness, and the cloze-maze approach are but three of the virtually limitless options for embedding assessment in the content of instruction, to provide regular feedback on students' abilities and to monitor students' progress in developing needed reading and learning skills.

Figure 3 Sample cloze-maze passage based on a science text

Waste from household, industrial, and (1) a. plant, b. agriculture, c. forest sources can cause pollution of water (2) a. fowl, b. rescues, c. resources.

The waste material carried from toilets and drains is referred to as sewage. If released into the environment too rapidly, sewage can make water foul-smelling and deadly to fish and other (3) a. organisms, b. environments, c. seas.

Sewage also contains bacteria and viruses that can cause disease. For example, in coastal areas, clams, oysters and other shellfish exposed to sewage may become (4) a. alive, b. confused, c. contaminated with the hepatitis A virus.

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Selin, Ann-Sophie (Finland)	Apr 2		
Steele, Jeannie (United States)	Jan 3		