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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.

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The International Reading Association is a nonprofit service organization dedicated to improving reading instruction and promoting the lifetime reading habit. The Association publishes professional books and five professional print journals: *The Reading Teacher* (about learners ages 1–12), the *Journal of Adolescent & Adult Literacy, Reading Research Quarterly, Lectura y Vida* (in Spanish), and *Thinking Classroom* (also published in Russian as *Peremena*). The Association also publishes the electronic professional journal *Reading Online* (http://www.readingonline.org) and a bimonthly newspaper for members, *Reading Today.*

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Departments

To the Editors 3
Island of Critical Thinking
Yury Vasilyev

Strategic Moves 42
Bringing All Students Into the Conversation
William G. Brozo

Website Review 44
Meeting of Frontiers
(http://international.loc.gov/intldl/mtfhtml/mfsplash.html)
Yekaterina Sidorova

Pros and Cons 45
Required Reading?
Rastislav Dinic

Features

Seeing What We Look At 5
Ali Nihat Eken

Understanding Students Understanding Mathematics 13
Milan Hejný

Fostering Family-School Collaborations 20
Penny L. Beed, Amy Sandvold, and Marcela Maslova

Improving Literacy Instruction in South African Schools: 27
The Business Trust's Learning for Living Project
James V. Hoffman, Natasha Beretvas, P. David Pearson, Cynthia Hugo, and Bertus Mathee

The READ Educational Trust of South Africa 34
Misty Sailors

Evaluating Group Work 37
Bahar Kerimova

To the Editors

Island of Critical Thinking

Yury Vasilyev

When I hold a new issue of *Thinking Classroom/Peremena* in my hands, I am always amazed by the amount of work that has gone into its creation. So many people have invested time and effort to make this journal popular around the world! Now I would like to tell you about a related activity here in my part of the world, in the small town of Kyzyl-Kiya in the south of Kyrgyzstan: a school journal devoted to critical thinking, published by me and my colleagues.

I will start with some background information. For the past three years we have been holding workshops here based on the international program Reading and Writing for Critical Thinking (RWCT). More than one-third of the teachers in our school have been through this training. Many have found the new program very appealing. They enjoy attending the sessions and have implemented RWCT methods and strategies in their classrooms. But at some point we began to ask ourselves, "What's next?" After all, the development of critical thinking cannot just be stopped. How could we—and our students—continue to develop our capacity for reflection? Could we ourselves create new formats for doing so? Such questions bothered not only the teachers, but also the students: "Will our teachers just go on feeding us the same old cinquains, clusters, and group work? Will there ever be anything new? Could we apply these new methods in everyday situations, not just in class?" Our newly liberated thoughts had given rise to a stream of questions, which made many of our colleagues uncomfortable.

A solution appeared quite unexpectedly. One of the students suggested a joint teacher/student publication devoted to the development of critical thinking. So this really was a grass-roots inspiration! The students worked out the details on their own and then presented the idea to the faculty. Many teachers were quite skeptical, as publishing a journal is a difficult and time-consuming business. The teachers pointed to *Peremena* as a model, and reminded us that such a publication is very difficult to sustain. However, the students' enthusiasm forced us to reconsider. Eventually the first issue of our journal, *Island of Critical Thinking*, was published. The title reflects our initial conception of the journal as a kind of "island" where everyone can freely express his or her views: on developing critical thinking and on education in general; on specific lesson plans; and on the overall reforms taking place in our school.

From the very beginning, the creative team at the helm of the journal strove to make the publication truly a joint venture, not just in theory but in practice. We elected an editorial council headed by two editors-in-chief, one representing the teachers and one representing the students. These two editors share equally in defining the contents of each issue. They discuss matters of presentation, style, and revision of articles. The other members of the team, both students and teachers, write the news items and articles, conduct interviews, and collect material for specific departments. General policy decisions—what events and issues should be reflected in the journal—are made collectively by the entire editorial council.

Here is an example of a piece published in *Island of Critical Thinking*. The author, 11th-grader Dinara K., addresses a common school problem, the use of "cheat sheets" (crib sheets):

> We might say that there are two types of cheat sheets: "mindless" and "thoughtful." The mindless ones are copied straight from the textbook, while the thoughtful ones are compiled carefully, including only the important ideas, in a concise and convenient form. What goes into writing a thoughtful cheat sheet? Students describe the process like this. First they carefully study the material in question. As a rule, they already basically understand it, so the problem is how best to organize it for oral presentation or for an essay test. If all the material is arranged correctly on the cheat sheet, constructing the test answers will be relatively simple. Students usually write down some basic ideas, an overall plan. Or they may devise a scheme to present what they know best in the best possible way. However, the surprising thing is that after putting together a thoughtful cheat sheet, the student discovers that he or she no longer needs it.

> The process of preparing the notes has made all the pieces fall into place in the student's mind. So during the exam the cheat sheet just serves as a kind of lucky charm—it stays safely tucked in a pocket, making its owner feel confident of his or her knowledge….

Does this sound exceptional to you? It certainly is in this part of the world—until recently no school paper would have been allowed to print such ideas. But now, in our *Island of Critical Thinking*, we can. The very principles on which it is based are openness, impartiality, and objectivity—democratic approaches.

When a teacher begins to think critically, sooner or later his students do, too. That is what happened, for example, in the class of Tatyana A. Kolesnikova, a teacher of history and head of the school debate club. She and her student Mirgul wrote the following about debate:

> T.K.: Developing debate skills, which means also developing critical thinking, is heavily dependent on research skills. Debaters need to support their arguments with corroborative evidence or proofs. Sometimes simple logic or simple examples suffice. But often you need to look further for supporting information, consulting books, newspapers, journals, the Internet. How can you find your way through the abundance of information and choose what you need? You simply can't do it unless you know how to evaluate the many streams of information flooding in on us from all directions …. Another important skill in debate is listening to what others say. Not just hearing them, but actually listening to them…. Debate also requires oratory skill…. But you cannot learn to speak eloquently and effectively until you have learned to think clearly.
>
> M.: "You learn a lot from debate!" This is one of the principles of our club, and it certainly holds true. I really feel that I have learned to think more freely, to speak more precisely and with greater detail. When you work on your presentation, you automatically learn new vocabulary connected with your theme. And you learn to present your ideas so that others can understand them.

This example shows how teachers and students collaborate in authoring articles for the journal.

After our first issue of *Island of Critical Thinking*, we started thinking about how to engage our readers in a dialogue, how to motivate them to work with us. We decided to use "Editor's Questions"—questions posed at the end of particularly interesting articles. An editor's question is designed to draw the readers' attention, to emphasize certain points in the article, and to elicit a response from readers, perhaps even a submission for a future issue. In our experience, these questions have been effective.

We also conducted a survey of our readers, which helped make us aware of their needs and led us to introduce some changes. The journal now has a new format (preserving the best elements of the old one), its graphic quality has been considerably improved, the print run has increased, and the content reflects the best our school has to offer in the areas of education and critical thinking.

Nevertheless we do have our problems. The editorial council has been criticized for not expanding our focus. People tell us, "You should not just stew in your own juices; you should make this journal a town-wide publication." We agree completely that the time has come to take the journal to the next level. But this raises the problem of how to organize student/teacher collaboration throughout the entire town. We plan to undertake a serious study of this problem in the near future.

In the brief lifetime of *Island of Critical Thinking*, we have learned a lot, we have accomplished a lot, we have gained experience in publishing, and we have refined our vision of the journal's future. Some may ask, "Why do you spend time on this? What good is it?" My answer is that we are not doing this for fame or glory—we are doing it because it is important, because we enjoy it, and because the whole school benefits from it. This is our way of contributing to education reform, not awaiting instruction from above, but responding to the needs of the times.

Yury Vasilyev is a physics teacher and Deputy Director of School-Lyceum # 2 in Kyzyl-Kiya, Kyrgyzstan, and is also an RWCT project trainer. E-mail vasilievu@rambler.ru.

Ali Nihat Eken

Seeing What We Look At

We knowers are unknown to ourselves, and for a good reason: how can we ever hope to find what we have never looked for.
(Nietzsche 1956, 149)

I am not the type of person who likes to sleep in, and I don't find it difficult to wake up early. But I do like to let my clock radio wake me up. As soon as I'm awake, my mind starts reacting to what I hear from the radio: music, commercials, or the news. Whatever it is, it is my first contact with the media every morning. At the breakfast table, I read the daily papers. There are times when I continue to read the newspaper on the bus, and times when I forget to take it with me and wind up glancing at the paper of the commuter next to me. Sometimes I choose not to read anything; I just look out the window till I arrive at work. Billboards or the bumper stickers on cars are there to keep me busy. The contact I have with the media is an all-day affair. Since I enjoy watching TV, the contact continues into the evenings. Sometimes I say to myself: "This must be what experts call a 'heavy bombardment of media messages.'" But I am usually confident that I am in control of those messages.

However, I can't help thinking about other people: Do they question the nature of their contact with the media? Are they able to use the media effectively? Are they active or passive readers? Do they know how to decode the messages within media texts? Do they know that all media are constructed to create certain effects? Do they unknowingly let the media shape their opinions? In other words, do they "accept the surface intentions of the message designers" without question, or do they accept the media's perspective only as "the result of a reasoned, conscious process in which they realize the media interpretation is the best among all available alternatives" (Potter 1998, 7)?

These are all questions I have asked myself in order to establish a healthy relationship with the media. Seeking clear answers, I have reviewed the studies on media and media literacy, which have helped me gain an essential awareness that literacy is not limited to the printed page. Students, in their daily lives, encounter a variety of audio and visual texts (Lankshear, Gee, Knobel, and Searle, 1997) where different versions of reality are constructed for their consumption (Downes & Miller, 1998). The fact that the media constantly provide these texts for consumption makes constant criticism and a continual awareness of other people's motives more essential than it has ever been (Rusmone in Downes & Miller, 1998). Therefore, McBrien (1999), Branston and Stafford (1996), Lusted (1991) and many others believe that students need to acquire media literacy. McBrien writes that helping students become media literate means providing them with "tools to make responsible choices about what they see and hear" (*ibid.,* 1999, 76). These tools will help students "raise the right questions about what they are watching, reading or listening to" (Thoman, 1999, 50). The critical importance of the ability to read media texts is also apparent in Potter's explanation: "Media literacy is a perspective from which we expose ourselves to the media and interpret the meanings of the messages we encounter. We build this perspective from knowledge structures. To build our knowledge structures, we need tools and raw material. The tools are our skills; the raw material is information

Appendix A Course Outline

Weeks 1 and 2: The Language of Media
- A study of what *text* means in media studies through various media texts, e.g., newspapers, sitcoms, commercials, lyrics
- A study of semiotics: analysis of signs (e.g., analysis of images, sounds, colors, clothes, hairstyles as depicted in various media texts)
- A case study of semiotics in *You've Got Mail* (1998), directed by Nora Ephron

Weeks 3 and 4: General Theories of Narrative
- Narrative theories by Todorov, Propp, and Levi-Strauss
- Applying narrative theories to different media texts, e.g., weather reports, editorials, newspaper articles, films, music videos

Weeks 5 and 6: Genres
- Genres and their underlying principles
- A comparative study of genres using excerpts from various media texts, e.g., soap operas, reality shows, operas, news bulletins, children's programs, women's magazines

Weeks 7 and 8: Representations
- An examination of how the media represent people, identities, events, stories
- Stereotypes
- A comparative study of how men and women are represented in advertisements and TV commercials
- A comparative study of how women are depicted in Turkish soap operas, films, and sitcoms
- A case study of how Marilyn Monroe was represented in Hollywood films

Weeks 9 and 10: Ideologies and discourses
- An examination of dominant discourses and ideologies in the media
- An examination of sets of ideas that give some account of the social world, e.g., Marxist approaches through sample media texts such as excerpts from films— *Citizen Kane* (1941) by Orson Welles and *Ladybird, Ladybird* (1994) by Ken Loach
- A case study of constructing news, e.g., constructing news for the public broadcasting network vs. constructing news for the private television network

Week 11: Audiences
- An examination of types of audiences that are in contact with the media
- An examination of what the media do to their audience
- A case study of how audiences respond to different media texts, e.g., music videos, commercials, science-fiction films

Weeks 12 and 13: Media Workshop
- A revision of the whole course through various media texts, students' projects, and assignments
- Application of knowledge and ideas

Week 14: Group Interviews
- Evaluation of the course through group interviews

from the media and from the real world" (Potter, 1998, 5).

Drawing upon the literature and my own experience in teaching, I designed an introductory elective media literacy course for third-year undergraduate students at the School of Applied Languages at Bilkent University in Turkey. The 42-hour course lasted 14 weeks, and 26 students took the course (see Appendix A for course outline). The students' proficiency level in English was advanced, and the lessons were conducted in English. The course aimed to provide students with tools to help them understand

- what *text* means in media studies
- how and for what purposes media texts are constructed
- how these texts represent people and events
- to what extent they represent reality
- how the target audience influences the production of such texts
- how the language in each form of media differs
- what ideology informs a given media text
- to what extent the media can influence people
- how people can control the influence of media

In short, the course aimed to help students gain critical autonomy in their interpretation of the media.

To create media awareness in students and improve their literacy in the interpretation of the media, I used different texts, including music videos (e.g., *You Get What You Give* by the New Radicals, 1998); advertisements (e.g., shampoo and jeans ads); newspapers (e.g., headlines, articles, photographs); magazines (e.g., women's magazines, sports magazines); and film excerpts (e.g., *Up Close and Personal,* Avnet, 1996; *You've Got Mail,* Ephron, 1998; *Notting Hill,* Michell, 1999; *Psycho,* Hitchcock, 1960).

The classroom environment was designed to encourage students to express their opinions freely and react to each other's opinions. I employed both small group and class discussions. I asked students to examine different media texts—commercials, newspapers, magazines, music videos—in groups and then share their comments with the rest of the class. Students also completed weekly assignments and a term project on issues such as how women are depicted in Turkish soap operas, how producers make reality shows attractive for audiences, to

what extent American sitcoms affect Turkish sitcoms, and how news reporting for public broadcasting differs from the reporting for commercial TV stations. This work aimed to provide students with tools leading to autonomy in their interpretation of media texts.

A framework for analyzing media texts used in the course

After reviewing works by Downes and Miller (1998); O'Sullivan, Dutton, and Royner (1998); Potter (1998); Price (1997); Branston and Stafford (1996); Hart (1991); Lusted (1991); Burton (1990); Alvarado, Gutch, and Wollen (1987); and Masterman (1985), I developed a framework students could use in analyzing media texts, separately considering six parameters:

- **Media institutions and technologies:** who produces media texts and what kinds of technologies are available; how these technologies are used in TV, radio, cinema industry, press, alternatives, independents, etc.
- **Media categories:** advertisements, TV news, songs, pop music videos, films, radio shows, etc.
- **Media languages:** how the media produce meanings: signs, symbols, images, narrative structures, characters, etc.
- **Ideologies:** set of ideas, a worldview, dominant ideas in the media texts
- **Media representations and reality:** the relation between media texts and actual people, places, events, ideas, genders, stereotypes, races, appearances

Appendix B **A sample student worksheet for the music video *You Get What You Give* by the New Radicals**

Watch the music video *You Get What You Give* by the New Radicals and take some short notes on the following questions:

Dimensions of Media Literacy	Questions	Student's comments
Media Categories	What type of text is it?	*rock music video*
Media Language	What is the initial equilibrium in the story? How is it destroyed? Why? What happens afterwards? Why?	*a shopping mall – everything in order, people are shopping, wearing nice clothes – suddenly a group of young people arrive: rebellious, wearing strange clothes, change the mall into a chaotic place – protest?*
	What are the contrasts / oppositions in the story?	*order vs. disorder, formal clothes vs. informal clothes, slavery vs. freedom, conformity vs. non-conformity, mainstream vs. independent/alternatives*
	How do the following contribute to your understanding of the story? Clothes, colors, camera movement, lighting, hairstyles, lyrics, setting, rhythm of the music	*e.g., setting:* *a shopping mall: significant, symbolic, against consumerism? the video wants me to take sides against consumerism?*
Representations and Reality	What kind of people do you see in the video? What do they wear? Can you classify them? What do you think they represent? How real do they look?	*clothes signify a lot –* *young people who revolt: casual clothes, funny hats – look different from the rest of the society – against the rules of the society?* *Other people in the mall: wear formal clothes – look rich, their lifestyles are different from those of the young people – conformist stereotypes*
Audiences	Who do you think this video appeals to? Why?	*young but educated audiences –* *music, clothes, the way they dance and behave – all giving a hidden message to young people*
Ideologies	What are the worldviews or set of ideas you can think of while/after watching the video? What makes you think so?	*two groups of people with different views;* *people who conform to the rules and those who don't – they clash with each other – dominant ideology in the video seems to be that of the 1st group but young people try to change it.*
Media Institutions	What do you think about the production company? Does it look like a mainstream product or not? Why? Why not?	*not a mainstream product – because breaking rules – non-conformist – against clichés – support alternative lifestyles*

- **Audiences:** readers, listeners, watchers: how do the media reach them and address them; and how audiences choose, consume, and respond to texts, etc.

Sample media texts and classroom activities used in the course

Throughout the course I used various media texts for classroom activities, including pop music videos, films and film excerpts, TV news, and advertisements.

a. Pop music videos

Students especially enjoyed working on pop music videos. One of the videos I used was by the New Radicals: *You Get What You Give* (1998). To familiarize students with different aspects of media literacy such as narrative, media language, ideology, representation and reality, and audience, I provided them with a worksheet (see Appendix B for the types of questions and sample student responses) that would encourage them to think about those aspects of the media. The students watched the video, took notes, and discussed their notes in small groups, e.g., how the target audience might influence the product; in what way(s) the language of the music video was different from other forms of language; what societal values were prevalent in the story and how they were criticized; what different groups of people were represented and how they were represented; and to what extent these representations reflected reality. The discussion among groups then developed into a lively class discussion on the mainstream media, mainstream consciousness in society and the media, and the alternatives to mainstream media and ideas.

b. Film excerpts

Another type of media text I used in the course was films. For one of the tasks, students watched two excerpts from *Notting Hill* (1999) directed by Roger Michell. The aim of the task was to show students how the media represented people, in this case a film star, and to what extent media representations reflected reality. The first excerpt from *Notting Hill* (*ibid.*) was the opening scene in which the audience is introduced to Anna Scott (Julia Roberts). The second excerpt was the scene in which William Thacker (Hugh Grant) introduces Anna to his family at his sister's birthday party, where everybody talks about their fears, anxieties, and problems at the dinner table. Students took notes on the worksheet about how Anna was depicted in each excerpt (see Appendix C).

After taking notes on the two excerpts, students discussed their observations in pairs, and then there was a class discussion on the similarities and differences between the two depictions of Anna Scott. This specific discussion led to further discussion on how film stars are usually represented in the media. As a follow-up

Appendix C **A sample student worksheet for *Notting Hill***

Excerpt 1: Watch the first excerpt from *Notting Hill* and take notes on the following prompts on how Anna Scott, a famous film star, is introduced:

Anna in the opening scene	**Setting** glamorous, rich, expensive, Hollywood, flashing lights
	Music nice music – "She" by Elvis Costello – Julia Roberts' beauty and the song go well together – Julia Roberts as an idol
	Camera many close-ups showing how beautiful, gorgeous, wonderful she is; people envy her
	Lighting flashing lights everywhere and seducing colors – all for idolizing her
	How Anna is depicted in magazine covers special person – goddess – talented – idol

Excerpt 2: At William's sister's birthday party, Anna and the family members sit at the dinner table and talk about their fears. Watch the second excerpt and fill in the table below. Then discuss how media represent people:

Anna's fear or anxieties	She is not like a star: has fears, anxieties – been on a diet since she was 19 – thinks she is not beautiful - can't have a decent boyfriend, can't have a private life – journalists are after her – no privacy
How other people at the table react to what Anna says	They can't believe her – because she is a star – she must be different from the rest – because this is how media have shown her to us – Even a star can be ordinary – media may want us to see things differently, create an image that may not be true – all construction

Appendix D **A sample student worksheet for television news about hooligans**

Watch the news clips and take notes on how each of the following is used in each clip:	National public broadcasting network	Turkish commercial channel
Camerawork	more objective, not many close-ups distance between the camera and the hooligans	subjective, close-ups, tilted camera increases excitement, suspense
Duration	3 minutes	7 minutes, violent scenes shown again and again
Background music	none at all	dramatic, especially when the camera zooms in on a hooligan bleeding
Visual effects	only captions summarizing the event	frequent use of arrows and circles highlighting how hooligans fight with each other
Language used	objective formal cautious	creates tension clichés exaggeration
People interviewed	Football fans, two psychiatrists	Mostly fans, laymen

activity, I provided students with magazines. I asked them to go through the magazines to see how movie stars were depicted in them and to make a comparison between the film and the magazines. In class we discussed and compared the techniques employed to present the stars: close-ups, big photos, glamorous settings, beautiful clothes, sensational headlines, bright lights, background music, etc.

c. Television news

In order to familiarize the students with media ownership and how it can affect the media texts, I used two versions of a television news story about soccer hooligans. The first clip was from the Turkish national public broadcasting network and the other from a Turkish commercial channel. I provided students with a worksheet to organize their thoughts (see Appendix D).

After watching the clips and taking notes, students discussed the similarities and differences between the treatments of the story. The discussion helped them to gain an awareness of how media ownership can affect the production of media texts. As a follow-up activity, students analyzed the treatment of the same news story in tabloids and in quality newspapers.

d. Advertisements

Advertisements or TV commercials can be used effectively in media literacy programs because they are brief but very rich in content and effect. To create an awareness of how media texts vary according to their target audiences, I divided the class into two groups and had them look at magazine advertisements. The first group found various advertisements in which the male body was used, and the second group found advertisements in which the female body was used. The groups prepared posters using the ads they found, noting the source in which each ad was printed. Then they displayed the posters on opposite walls of the classroom and invited each other to look closely at the advertisements they had collected. They discussed how the male and female bodies were presented in these ads, and whether the presentations differed according to the particular magazines in which the ads appeared.

How students benefited from the course

In order to find out the effects of integrating media studies into curriculum, at the end of the course I divided the class into five groups and conducted group interviews during which I asked my students to reflect upon the whole process. I interviewed 25 students out of 26 (one student was absent when I conducted the interviews). Each interview lasted 20-30 minutes and focused on students' answers to the following two questions:

1. Have you found the course useful? Why or why not?
2. To what extent has the course helped you understand media messages?

When I analyzed my notes from the interviews, six categories seemed to emerge from the data. The points below indicate common responses offered by students in the group interviews, which helped me to better understand students' reactions to the course and to plan future lessons.

a. Integrating media literacy into the curriculum helped students gain critical awareness of the media.

The first category of responses that emerged from the data indicated that through media literacy, students gained critical awareness of the media that taught them to be "wide awake" and alert when they received a media message. Students frequently pointed out that the course had made them willing to question and criticize texts actively rather than accept things as presented by the media. One student said: "When I watch commercials now, I can apply different approaches to them. For example, in the past I used to watch without questioning, but now I pay attention to how the product is being promoted, how the audiences are persuaded to buy the product." Another student agreed: "Thinking critically and analyzing has become a habit for me. I can't help thinking about the significance of colors, setting, music…" The other student added: "Things may not be the same as they look. I think there are hidden messages beyond what is seen." One student compared a media-literate person to a wine expert: "A wine expert can distinguish high-quality wine from bad-quality wine. In the same way, having the knowledge of how the media work, I can distinguish between the messages I've received from the media. I can control them."

Student responses also indicated that gaining critical awareness of the media had increased their self-confidence. Twenty-three students out of 25 emphasized that they felt privileged after taking the course because they learned to *read* films, TV news, and commercials—not only *watch* them. Two of these students stated that the course had definitely increased their self-confidence in intellectual discussions. One of them elaborated on this point: "In discussions on media, I feel that I have a lot to say confidently, because I know that I can justify what I say." Another student agreed: "When I discuss media with my friends outside class, I feel that they listen to me carefully. This makes me happy and more self-confident."

b. The media literacy course made students selective.

Nineteen students out of 25 noted that the course had helped them to be selective when faced with many different alternatives. For example, one student said: "I like going to the cinema. I used to go to all kinds of films. After this course, I have become more selective. I think I know what I like. The cast, the director, genres etc. are very important for me." Another student expressed a similar view: "I know what I am looking for; therefore, I am more selective when I buy a newspaper or decide which TV program to watch." Four other students expressed a similar view, stating that they used to watch whatever programs they found on TV, but after taking the course they tended to eliminate the ones that were not objective or that attempted to impose ideas on them.

c. The critical autonomy that students gained through media literacy in class helped them outside of class as well.

The responses I received in the group interviews suggested that the critical autonomy students gained in class helped them outside of class as well. One of the students explained: "Now when I watch a film at the theater, I can't help thinking about the person sitting next to me: 'Does s/he see what I can see? Is s/he as privileged as I am?'" The same feeling was experienced by 15 other students, who highlighted their belief that once having learned to analyze, think critically, and interpret, they wouldn't forget these skills and would make use of them in their daily lives, too. One of these students said: "I look at life from a new point of view now. I don't think I will ever forget what I have gained through media literacy." Seven students said that their knowledge of how a media text is constructed and awareness of how the media could depict people as either angels or monsters

caused them to reconsider the nature of their relationship with the media and take greater control over the media in their lives.

d. The media literacy course created a context in which students could freely engage in discussion.

Eighteen out of 25 students interviewed agreed that the course gave them a sense of freedom because they had the opportunity to express their views and participate in discussions. One of these students stated: "Discussion hours were very useful because we freely expressed our opinions and listened to each other. Therefore, discussions opened new doors to knowledge." Another student added: "I have gained new points of view by taking part in discussions freely." Another student said: "Through discussions I have realized how important it is to base my arguments on solid facts or examples if I want to sound convincing."

e. The media literacy course improved students' language skills.

The group interviews also showed that analyzing media texts helped students learn new media- and literacy-related terminology while practicing their English through listening, taking notes, discussions, and assignments. Seventeen students indicated that they learned a lot of media- and literacy-related vocabulary in English. One of these students said: "I have learned a lot of terminology related to media studies and this makes me feel competent and confident while analyzing media texts and taking part in related discussions." Another student agreed: "Discussion hours were really useful because I believe that I have gained confidence in speaking English." Sixteen students pointed out that the course had improved their listening skills because they had watched a lot of films and commercials and listened to many radio shows in English. One of these students said: "I think I can understand people speaking American English better than those speaking British English." Twelve students said that the assignments they prepared improved their writing skills, too. Five of these students involved in a group project said: "The group project we prepared on how women are depicted in recent Turkish soap operas helped us a lot in writing. We watched many soap operas, took notes, brainstormed, used our notes to write the first draft of our essay, and then finalized our essay. Writing a well-developed and convincing discursive essay meant hard work and patience. We had to find very good examples from the soap operas to support our views."

Students' suggestions for future courses

Another benefit of the group interviews was students' suggestions for future courses. Almost all of the students I interviewed agreed that they appreciated the course, and therefore asked me whether they could take another course in media literacy the following semester. Six students suggested producing their own media texts, e.g., radio programs and commercials. Four students said it would be a good idea to incorporate more information on Internet literacy into the course, since they believed that they would be using the Internet more often in the future.

Discussion

This study originated in my inner dialogues, which developed into an introductory course in media literacy. Although it is based on a small-scale classroom research project in Turkey, I believe the results can help set the stage for media-literacy programs in schools in other countries, because various studies in different contexts show similarities with the case study I conducted. For example, Daniels (1998) points out in his report on his study in a K-12 Christian school in the suburbs of Sydney that through media studies students learn to "consider what doesn't get shown as well as what does to determine the truth of a reported piece, and they develop the skills to discern truth from falsehood in what is presented to them in the media" (79). Another similar result can be found in McBrien's study (1999) in which he states that using media examples in print and on video and the Web helps students "recognize stereotypes, biases, multiple viewpoints, advertising devices, camera techniques, and photographic manipulations, all of which contribute to the overall effect to move, entertain, persuade, or manipulate a consumer" (78). The main difference of my study lies in

the fact that it was carried out in a context of foreign language learning, where students improved their knowledge of media- and literacy-related vocabulary, their language skills (through listening, writing, reading, and speaking), and their critical thinking skills.

This case study indicates that being media literate helps students make healthy choices about the media. When they become aware of how media are constructed, they can analyze, question, view media texts critically, and spot journalistic bias and intentional editorial omissions. The study also suggests that the positive effects of the critical autonomy the students gain through media analysis are not limited to the school environment; students believe that critical autonomy will help them outside school as well.

Conclusion

What educators and school administrators all over the world should recognize—especially in countries like Turkey, where media forms are on the rise but media literacy is not yet a major subject in the school curriculum—is that literacy is not limited to the printed word. It is much more comprehensive than it used to be, due to the emergence of new forms of media and new contexts of education. The demands of the future—the increasing importance of visual communication and information, the penetration of media into our central democratic processes, the management and manufacture of information by the media, the high rate of media consumption and media saturation, and various ideological influences—make media literacy an essential dimension in education that we cannot and should not ignore (Masterman, 1985). It should be kept in mind that the students who are least vulnerable to harmful media messages are the ones who can read these messages analytically and critically, because they have the necessary skills to assess and evaluate the messages for themselves instead of accepting them without question. Therefore, integrating the study of media literacy into the curriculum, at all levels of education, will help equip students with the necessary skills to cope with media messages on their own.

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Ali Nihat Eken, Ph.D., is an instructor in the Foundations Development Program at Sabanci University in Istanbul, Turkey. E-mail eken@sabanciuniv.edu.

Milan Hejný

Understanding Students Understanding Mathematics

Introduction

> *The rule shall therefore run as follows: The scholar should be trained to express everything that he sees in words, and should be taught the meaning of all the words that he uses…. For he who cannot express the thoughts of his mind resembles a statue, and he who chatters, without understanding what he says, resembles a parrot.*
>
> Comenius, 1649 (translated 1896, p. 329)

A lot has changed in schools in the four centuries since Comenius wrote these words in his *Didactica Magna,* but the basic problem he describes still remains: Understanding, not chattering, must be the goal of the teaching/learning process. Anna Sierpinska, one of the most accomplished world experts on the teaching of mathematics, has written a whole book on the issue of understanding. In the introduction, she asks questions that are relevant to anyone teaching mathematics today:

> *How can I teach so that students understand? Why, in spite of all my efforts to explain things clearly, do they still not understand, and still make all these nonsensical errors? What exactly don't they understand? What do they understand and how?*
>
> A. Sierpinska (1994, p. xi)

The aim of this article is to discuss these questions and to suggest some solutions. I would also like to encourage teachers to experiment with new approaches and will offer them specific strategies to accomplish this.

Knowledge with or without understanding

Knowledge without understanding might be termed *parrot knowledge*. Parrot knowledge is not true knowledge, and the phrase itself is something of an oxymoron. Yet we can understand and use this phrase, just as we use the term "soy milk" to denote a milk-free beverage.

In fact, the distinction between parrot knowledge and actual knowledge (with understanding) is only a theoretical tool that enables us to talk about this phenomenon. We would rarely find these two extremes in real life.

Parrot knowledge may be thought of as a cognitive "disease" that is spread by rote learning. In schools where students' independent thinking is suppressed, parroting becomes an epidemic.

An advanced case of parrot knowledge

The following story happened 20 years ago, but it could just as well have happened yesterday. (All eight examples cited in this article are from the author's archive. For additional commentary on stories 1 [Iva], 3 [Fanka], 4 [Filip], and 8 [Ela] see Hejný and Kurina, 2001.)

Story 1: Iva (grade 5) has a good memory, is conscientious, and does all her assignments very well. Her previous teacher regarded her as a top student. However, her new teacher wants the students to understand mathematics.

Teacher 1: *All right, so we want to draw an obtuse triangle and divide it into two right-angled triangles. Who can tell me what an obtuse triangle is? Iva.*

Iva 1 (squints her eyes and spits out): *A triangle that has all three angles obtuse is called an obtuse triangle.*

T 2: *Now, Iva, you have kind of rushed into it. Come up to the board and show us which of these triangles here are obtuse* (there are 7 triangles on the board, two of which are obtuse).

I 2 (coming to the board and announcing): *I don't know how to show it. I only know how to say it.*
T 3 (surprised by the girl's admission): *All right, so tell me what an obtuse angle is.*
I 3 (quite confidently): *An angle that is bigger than a right angle and smaller than a straight angle is called obtuse.*
T 4: *And could you draw those for us—the right, straight, and obtuse angles?*
I 4 (taken aback): *No, I only know how to explain it. I don't know how to draw it.* (confidently rather than fearfully asks) *Did I say it wrong?*
T 5: *The point about the angles was correct, but the point about the obtuse triangle was wrong.*
I 5 (feeling hard done by, she has briskly found a boxed text in her textbook): *Here it is:*
A triangle whose three angles are all acute is an acute triangle.
T 6: *That's right, but that applies to an acute triangle, not to an obtuse triangle.*
I 6 (realizing her mistake and blushing): *Yeah, I got it mixed up. It's here* (quickly finds a different box with the definition of "an obtuse triangle").

Iva repeats memorized words, but the words do not correspond to concepts. Terms such as *obtuse triangle* or *obtuse angle* are meaningless for her. This story illustrates two cognitive characteristics of formal knowledge (1 and 2 below); and two basic attitudes that go hand in hand with this knowledge (3 and 4):

1. Knowledge is stored in the memory as isolated data (in the example above, as a verbal definition).
2. Knowledge is not connected with a student's life experience. (Iva cannot picture the words she uses.)
3. The student is convinced that this superficial knowledge is fully acceptable. (Iva claims *I can explain it*.)
4. The student is convinced that s/he is not capable of understanding the underlying concept. (Iva expresses this belief in entries I 2 and I 4.)

It is this last attitude that marks the most advanced stage of rote learning. In such cases any extra classes or coaching are worthless. First, it is necessary to eliminate the student's negative attitude. For a geometry class, for instance, the teacher might give the student an easy assignment, such as teaching her four-year-old brother how to build a block castle; then discuss this activity.

Story 1 points out an important feature of formal knowledge: When there is a mistake in formal knowledge, the student is not able to spot it, let alone eliminate it.

How do we understand the word *understanding*?

Story 2. I was eating bread and butter with a tomato and a hot pepper, and feeding my two-year-old son porridge. The boy wanted some pepper. I moved it out of his reach and warned him: *A pepper is hot, hot!* Yet, in an unguarded moment he got hold of the pepper, and right into his mouth it went. Surprise, agony, and tears followed, as well as treatment to soothe his burned little mouth. About a week later when we were shopping, my son pointed to a pepper and said: *'ot!* [hot].

A child is eager to learn, wanting to know not only words but also things. The best way to learn is through personal experience. That's how my son came to understand his father's words: *A pepper is hot, hot!* It was a painful lesson, but as a result it made a profound impression. Now the boy knows not only the simple word *pepper*, but also the more complicated concept *hot,* and he knows that his father's intonation conveys important information as well.

Understanding of the concepts conveyed by language about the surrounding world and the world of abstract ideas (notions, relationships, phenomena, situations, conditions, and processes) is gained through experience. It does not always have to be personal experience, though. By reading the directions for use of a washing machine, I acquire explicit knowledge that I can later employ to operate the washing machine correctly. At the same time, having previously read instructions for other appliances, I use my experience to help me understand the directions I am reading now. If I encounter something I cannot understand because I lack the necessary experience, I have a choice: I can go ahead and acquire the needed experience hands-on, or I can ask advice from somebody more experienced.

Definition: The extent of our understanding of a concept is determined by the extent of its connections to our personal experience and explicit knowledge, to other concepts, and to ideas in our minds. If the connections are few, we are dealing with *formal knowledge.*

How do we come to understand mathematical concepts?

Story 3. Five-year-old Fanka liked to count things with her grandmother. She had counted 2 chairs and 3 chairs, 2 candies and 3 candies, 2 dolls and 3 dolls, several times. So her grandmother decided to ask her a question: *There are 3 strawberries under my hand and 2 strawberries under the napkin. How many strawberries altogether?* The girl could not see the strawberries. She looked from the napkin to her grandmother's hand, obviously thinking very hard. Then she put two of her left-hand fingers on the napkin and three of her right-hand fingers on the grandmother's hand and counted up her fingers. She called out joyfully, *Five, five!* The grandmother praised her enthusiastically. Fanka's eyes lighted up as she said, *It's always five. Two and three together is five.*

The great joy that accompanied the girl's performance came from the magic of the discovery. Fanka discovered that when counting strawberries, she could represent unseen objects with her fingers. Her last sentence, particularly the word *always*, indicates that her discovery transcended this specific situation. Fanka clearly understood that fingers could be used to represent not only strawberries but any objects.

This story illustrates how knowledge with understanding is formed: Knowledge that results from our own intellectual processes is knowledge with understanding.

Let us take a closer look at the process that led to Fanka's discovery. First, Fanka had clearly had some experience with counting objects and finding the sums, such as *2 dolls and 3 dolls—how many altogether?* or *2 fingers and 3 fingers—how many altogether?* She would simply count the objects, not yet knowing the relationship between these sums. Every such sum that the girl counted up was a *discrete model* of the abstract concept: 2 + 3 = 5. Then a challenge cropped up, a clever question asked in a climate of warmth and encouragement. The challenge involved an obstacle—Fanka could not use her usual procedure of straight counting. She had to somehow overcome the obstacle, and she was strongly motivated to do so. (Motivation can be defined as tension that results from the dichotomy between *I don't know* and *I want to know*.)

Then Fanka realized that unseen objects (the strawberries) could be represented by fingers. She mentally connected the two separate models—the strawberries and the fingers—and realized that one could replace the other. This discovery goes significantly beyond the situation from which it originated. It applies not only to the numbers 2 and 3, but to other numbers in the same way. Fanka recognized that in mathematical situations, fingers can serve as universal substitutes. Such knowledge significantly increased Fanka's level of arithmetical knowledge and skills. The girl perceived this change as a delightful feeling, a source of great joy.

How is formal mathematical knowledge created?

Story 4. Five-year-old Filip counted 2 apples and 3 apples to find that there were 5 apples altogether. Then he wanted to add together 2 candies and 3 candies. He made a pile of 2 candies and was just about to make a pile of 3 candies when his father interrupted him. The father showed his son that there was no point in counting again: With the apples, they had found out that 2 + 3 = 5, so the same must apply to the candies. And not only to the candies, but also to fingers, chairs, cars, any object. The boy probably understood his father's explanation, but he felt no enthusiasm for the new knowledge.

The stories of Fanka and Filip show two different approaches to education. In both of them, we are dealing with the concept of representation: The learner comes to recognize that it is not necessary to count actual objects; they can be represented by other objects, e.g., fingers.

However, in these two cases this concept was formed in the children's minds in two very different ways. Fanka worked her way up to it by generalizing from her

previous experience; she created the concept by herself. With Filip, the knowledge was given to him, even forced upon him. Both Fanka and Filip will probably use this knowledge equally correctly, just as other children do. However, it is highly probable that Fanka, who managed to discover the idea of representation for herself, will be more successful later on in understanding other processes of representation, such as substituting letters for numbers in algebraic expressions.

Abstraction

Story 5: In grade 5, as part of the explanation of percentages, we did several problems such as:

In Form 5A there are 8 girls; and in Form 5B there are only 6 girls. In Form 5A 4 girls have a pet at home; in Form 5B 3 girls have a pet at home. Which form has a larger proportion of pet-owners? (This problem can be represented as: 5A: 8g, 4p; 5B: 6g, 3p, where g=girls and p=pet-owners.)

The children found the solution rather quickly: *The situation is the same in both forms because there is one pet for every two girls in both forms.*

Then we moved on to more difficult questions, for example:

A: 10g, 5p; B: 11g, 6p, or
A: 13g, 4p; B: 9g, 3p, or
A: 12g, 7p; B: 11g, 6p, and so on.

Then there was a very difficult question:

A: 13g, 4p; B: 10g, 3p.

In this case the first solution proposed by one of the students, although it appeared logical, was inaccurate: *Both forms are in the same situation because if we take away one girl from each form, there will be one pet for three girls in each form.*

Some students were not happy with this solution and voiced strong objections to it. Still, for a long time we failed to resolve the problem. Martin claimed that Form B is more "pet-full," but none of his schoolmates could understand his strange argumentation. About a month later, when most students had forgotten about our unsolved question, Martin came up with a wonderful idea: *In Mathland* (a kind of Never-Never land, where incredible things happen) *there is a school with huge classrooms, and each class has 130 girls. In Form C there are 40 pet-owners out of 130 girls; in Form D 39 pet-owners out of 130 girls. Clearly, Form C is more "pet-full." Since form C is 10 times bigger than our Form A, and Form D is 13 times bigger than our Form B, this means that our Form B is more "pet-full" than our Form A.*

Martin's solution was based on his notion of a "Mathland classroom," something we can imagine even though it does not correspond to our everyday experience. By means of this abstract notion he was able to grasp the comparison of the ratios represented in the question, 13:4 and 10:3, and find the solution.

The thinking process that led Martin to his discovery is *abstraction*. Martin looked beyond the concrete aspects of our school, and considered the ratios 13:4 and 10:3 as objects in the number system, without any semantic restriction. The *abstract knowledge* contained in his discovery can be represented by algebraic symbols: If I want to compare two ratios $x:u$ and $y:v$ (13:4 and 10:3 in our problem about the pets), I can do this by creating equivalent ratios $x:u=xy:uy$ (13:4=130:40 in Martin's solution) and $y:v=xy:xv$ (10:3=130:39). Since the first number in each of these new ratios is the same, we can simply compare the second numbers, uy and vx (40 and 39).

Martin was influenced by his discovery for a long time. He tried to use the idea of proportion in different situations, connecting the idea to his previous knowledge. This process of situating new knowledge in our existing knowledge structure may be called *crystallization*. Sometimes the crystallization process involves a significant restructuring of our existing knowledge in light of new understanding.

Cognitive mechanism

We have described the individual parts of the *cognitive mechanism* involved in the formation of non-formal knowledge. We can now arrange the whole mechanism clearly in a sequence:

Motivation → **separated models** ⇒ **universal models** ⇒ **abstract knowledge** → **crystallization**

In this sequence, the two outer arrows (→) mark processes that occur spontaneously. Each of the two inner arrows (⇒) represents a thinking step, which can be facilitated by an appropriate educational strategy. The first inner arrow is usually a

process of *generalization*, the second of *abstraction*. Each of those steps is important for the quality of the resulting knowledge.

Building the concept of *negative numbers:* An illustration

The concept of negative numbers is very difficult for primary school students, much more difficult than learning about fractions. The history of mathematics underlines this fact. Even ancient civilizations worked with fractions. Yet mathematicians were still arguing about the legitimacy of negative numbers as recently as the middle of the 18th century, at a time when differential calculus was already well established (Kline, 1980). No wonder a sixth grader has difficulty with this concept.

When I was teaching math to students in grades 3 through 6 (1984–1986), I wanted to find a way to allow even the students who struggled with math to develop an idea of negative numbers. I developed the following strategy:

1. Carefully build up various discrete models of negative numbers, starting in grade 3.
2. Have students encounter negative numbers again and again. This should be done by expanding their experience of arithmetical structures.
3. Make systematic use of the diversity of students' opinions to foster discussion and create a learning climate encouraging to all students, regardless of their aptitudes.

In everyday experience, I found only four discrete models for negative numbers: a thermometer (e.g., the temperature is -5 °C), an elevator (the buttons for the floors below ground level are sometimes marked -1, -2, etc.), a map of the ocean floor (the depth of the sea bed), and finances ("I owe 100 Czech crowns" is the same as "I have -100 Czech crowns." However, this last model is problematic because children find it unnatural and confusing.)

In arithmetic, we arrive at negative numbers either by counting backwards … 4, 3, 2, 1, 0, -1, -2, … or by subtracting a bigger number from a smaller one. For example, if we take away 5 from 3, we get -2. This problem can also be expressed by the apparently nonsensical question, *How much do I have to add to 5 to get 3*?

It seemed almost impossible to have students discover the idea of a negative number by themselves. And yet, if I wanted this concept to enter the classroom in a constructivist guise, I needed to find a challenging situation that would lead at least one student to the discovery. From him, others would come to understand through informational osmosis. I will present four strategies that proved successful in my classroom.

Story 6: (Grade 3) One day in December I introduced myself to the class as a magician. I wrote on the board

add 2
subtract 7
add 10

Then I asked the students to think of any three-digit number and carry out the three steps written on the board. For example, if I think of 156 and add 2, I get 158; then I take away 7 and get 151, add 10 and get 161. When the students had finished counting, I asked Eva what number she ended up with. Eva said 177. I told her that the number she was thinking of was 172. Then I repeated the magic with two more students. Afterwards Jarda and Katka shouted out that they could do the magic as well. They both said correctly that if the final number was 511 then the starting number was 506; and if the final number was 105 then the starting number was 100. By that time, other children had figured out the trick, and Milan said, *You just have to take away 5*. I asked whether Milan's rule applied to two-digit and four-digit numbers as well. The children very quickly arrived at a positive answer. Then the bell rang, and I asked in a mysterious tone whether the rule applied even to *one*-digit numbers. The children yelled back that it did. I let their assertion stand and left the class.

The following day Andrea announced that she had tried the magic trick at home for all one-digit numbers, and that with the numbers 1, 2, 3, and 4 it was not possible. At my request, she showed the class why it would not work for the number 3, explaining, *When I add two, I get five, but now I have to take away seven and I can't do that*. Then Honza said, *If you take away seven, you'll get <u>minus</u> two!*

Honza's wisdom, obviously gleaned from his older brother, caught me off guard. Luckily, Andrea did not accept this *minus two* at all and a discussion ensued. Dan aligned himself with Honza, but most children agreed with Andrea, who insisted that Honza show her the *minus two*. That he could not do. No other important arguments were raised and the controversy faded away for a year. During that time, we came across negative numbers a few more times, and each time we reminded ourselves of Honza's discovery. The students probably came closest to the solution when we were working on the following problem: *The temperature at noon was +7 °C. By evening the temperature had dropped by 10 °C. How many degrees did the thermometer read in the evening?* But again the students did not accept the negative number as "a real number." They understood the –3 on the thermometer as a code for three winter degrees.

At the beginning of grade 4, Honza came up with an idea that he believed could show *when you go down to minus.* He referred to the story *The Searchers*, which at that time was as well known as *Harry Potter* is today. In one episode, the searchers were forcing their way through an underground corridor, which went up or down in places. Honza drew the way his searcher was moving in the underground corridor: first two steps up, then seven steps down, and then 10 steps up. Pointing at his drawing, he explained that the exit from the underground corridor was always 5 steps higher than its entry.

Thanks to his reference to a well-known story, Honza gained another couple of recruits for his "minus" numbers theory. But none of them could answer Andrea's question, which the teacher now mentioned again: *Show how much this minus two is.* Despite this shortcoming, for Honza, and certainly for a few other students, the underground corridor was a discrete model we could use to descend to numbers less than zero.

Story 7: (Grades 3 and 4). In preparation for problems about age, we played a game called "Chronos" starting in grade 3. A number line with the numbers 1–20 was drawn on the floor, and the class worked together on problems such as: *Adam is 3, Betka is 5 years old. In how many years will their ages add up to 20?* To solve this problem, we used a dramatization:

Two students stand on the number line: Adam on number 3, Betka on number 5. The student playing the god of time, Chronos, proclaims, *One year has passed now,* and both students take one step forward. Adam is now standing on number 4 and Betka on 6. The student playing the watchman announces, *Four and six are ten, Adam's and Betka's ages now add up to ten.* Chronos issues another proclamation, the children proceed to marks 5 and 7, and the watchman announces 12. The game goes on until Adam gets to number 9 and Betka to 11. At that moment the watchman calls out, *Adam's and Betka's ages now add up to twenty. We've found the solution!*

We played this type of game about five times in grade 3. We rarely managed to finish the whole performance. After just the first two or three steps the students would yell out the answer, and we only had to check it.

In September, in grade 4, we were working on the following problem: *The twins Petr and Pavel are 5 years old and their sister Radka is 11. How many years ago did their ages all add up to (a) 15, (b) 6, (c) 3?* To solve this problem, we went backwards on the number line into the past. Two steps back and we got the solution to (a). Question (b) provoked merriment in the classroom when the children found out that the twins were 0 years old, i.e., that they had just been born. Then an argument arose about the solution to question (c). Dan, who was playing one of the twins, extended the number line backwards to include the numbers –1 and –2. Most of the children either did not understand this idea or were against it. Dan claimed that his parents had already known two years before his birth that they would name him Dan. But the class refused to contemplate the age of a person who had not been born yet. On the other hand, the children admitted that it was all right for Maruska's mother to say, with a sigh, *Today, great-grandfather Arnost would have been 100 years old,* because in this case the great-grandfather had once been alive. The debate was intense and went on for half an hour. The children eventually admitted—and I considered this Dan's great success—that the number -2 could be on the number line meaning "two years before birth."

Story 8: (Grade 5) All the students had accepted the system of negative numbers as an extension downwards of the natural numbers. But problems persisted with the semantic understanding of these numbers. I managed a breakthrough with the story of Ela (a first grader), which I told the class in November. Ela's father asked her mother how much money she had and the mother answered, *Minus 200. Right now I've got 100, but I owe 300 for the phone.* Ela cried out very happily, *That means you don't have 200 crowns!*, because she had understood the word *minus*.

Two of the students took to Ela's idea right away, and in their mutual conversation they started to use the word *minus* jokingly in the sense of negation. Instead of *I owe you 10 crowns* they would say *You owe me minus 10 crowns;* or instead of *We lost by one goal* they would say *We won by minus one goal* and so on. This way of speaking quickly spread among the other students. Initially some of the students made inaccurate and nonsensical sentences. For example, one girl reformulated my statement *The register is not here* as *Here is a minus register*. But within a month, the use of the word *minus* had become clear to almost all the students. One student who usually struggled with math told me that he had explained to his grandfather, *When I said it was minus 5 °C below zero, I actually meant it was 5° above zero*. The boy added that his grandfather did not grasp it anyway.

Story 9: (Grade 6) The students had accepted the concept of negative numbers. We now used a toy figure called Puk to illustrate problems on a number line. For addition and subtraction problems (e.g. 5 + 3 = ?, 5 – 3 = ?, 5 + (-3) = ?, and 5 – (-3)= ?, (-5) + (-3) = ?, (-5) – 3 = ?) the figure moved on the number line according to the following rules:

1. The first number indicates Puk's starting position. Initially Puk always faces to the right: If he starts on 5 he is facing toward 6; if he starts on -5 he is facing toward -4.
2. If a – sign follows the first number (subtraction), Puk makes an about-face; if a + sign follows (addition), Puk stays facing in the same direction.
3. The next number indicates how many steps Puk takes, and in which direction: The number 3 (or +3) means Puk takes three steps forward; the number -3 means Puk takes three steps backward. (My students like to call these backwards **steps** "**pets**.")

Here are some examples:

5 + 3 = ?
Puk starts on the number 5, facing toward 6. He goes 3 steps forward and stops on 8.

5 – (-3) = ?
Puk starts on 5, facing toward 6. He makes an about-face (subtraction) so he is now facing toward 4. He goes 3 steps backwards (-3) and finds himself on the number 8.

-5 – (+3) = ?
Puk starts on negative 5 (-5), facing toward -4. He makes an about-face and is now facing -6. He goes 3 steps forward and ends up at -8.

The four illustrations in Stories 6–9 above are only some of the possibilities for a constructivist approach towards negative numbers. I encourage you to try your own experiments, and I wish you good luck. You will undoubtedly encounter disappointments and disillusionment, but you will also find unique moments of pleasure in your students' unexpected performances.

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Milan Hejný is a Professor in the Faculty of Education at Charles University, Prague, Czech Republic. E-mail milan.hejny@pedf.cuni.cz.

Penny L. Beed, Amy Sandvold, and Marcela Maslova

Fostering Family-School Collaborations

"I know that the involvement of parents is good, but I'm not sure about how to get started with a family-involvement program," says Svetlana (all names are pseudonyms). Silvia reports, "Families of children who are doing well are very supportive. However, there are some that just won't respond. They don't show up for conferences or meetings; they don't respond to my notes; they don't seem to care about helping their children with their homework."

Comments such as these can be heard in schools around the world from teachers who value family involvement, who spend time trying to find ways to make it happen, and who are frustrated with a lack of consistent results. These teachers know something important: Cooperation between home and school is crucial for the most effective learning to occur. Their beliefs are supported by substantial and convincing research delineating the advantages of family involvement including "higher test scores, long-term academic achievement, positive attitudes and behavior, more successful programs, and more effective schools" (Henderson, 1988, p. 60. See also Edwards, 2004).

Family-school collaboration becomes even more crucial in communities where schools are changing. When views about thinking and learning are changing, it is particularly important for parents to be aware of, understand, and be a part of the new ways of teaching. This is especially true when the lessons involve critical thinking and critical literacy. Critical thinking and critical literacy are concerned with creating a "community of thought and understanding" (Meredith, 2002). Therefore, students and their families need to have opportunities to become aware of and involved in these new types of communities. Likewise, once parents have learned about the new methods, it is important for teachers to know the kinds of "new environments" (Chorgolashvili & Salukvadze, 2002) that families, in turn, have (or have not) created at home.

The ways that teachers communicate with families can affect parents' responses as well as the level of respect they hold for teachers. When teachers try to connect with parents by transmitting information only about the school program and about tasks that they would like parents to perform to support the school, not all parents respond. Some teachers assume that a lack of response means that the parents do not care about either the school or their children's learning—that they are too busy or too caught up in their own problems to focus on these things. However, research findings contradict this negative view of parents. Most parents, regardless of educational level, class, or ethnicity, believe that involvement in their children's education will help their children. Furthermore, most parents recognize the importance of a positive home learning environment (Auerbach, 1995).

What, then, keeps teachers from establishing productive ties with families? In some parts of the world, one factor may be a tradition of formalized separation between home and school. Another may be teachers' lack of knowledge, experience, or professional development about how and why to connect with families (Jennings, 1990). In the latter case, teacher-preparation institutions, and schools themselves, can offer teachers help in reaching all families.

Communication and collaboration are the heart of strong family-school programs. In fact, Joyce Epstein (1998), one of the most well-known researchers in parent involvement, claims that the single most important factor in building collaboration is the teacher's approach to parent involvement, regardless of the education, marital status, or workplace of parents. Compton-Lilly and Comber (2003) add that all parents have a range of experiences that can contribute to their children's learning. When two-way communication (home to school and school to home) is established and welcomed by teachers, students begin to realize that what they do at home has value for their learning at school (Ladson-Billings, 1995). Collaboration also ensures that both educators and parents share ownership in children's education (Epstein, 1998). The responsibility for making the first move toward cooperation lies with the educator.

> "School has always been an initiator of change and should take the lead in school/family cooperation. The goal of parent–teacher cooperation should be to bring up healthy, wise, and good people…. Teachers should not wait for the parents to take the first steps; parents are expecting the inspiration to come from the teachers."
>
> *Luba, mathematics teacher*

Where, then, should educators begin? Because communication is the foundation of most partnerships, building effective methods for exchanging information is a good place to start. The purpose of this article is to describe some communication practices that are effective in building cooperation with families. These efforts may result in parents' becoming a major part of the community of thought and understanding initiated by the school.

Informal messages

One of the easiest and most powerful forms of communication is the positive or informative note sent home by the teacher (Berger, 1999). While in the past teachers may have sent notes home telling parents what their children needed to be doing, or what they were doing wrong, a positive note tells the parent about something the child has accomplished. The accomplishments may vary, from completing an expected task for the first time, to going beyond expectations.

> "My son brings home mostly negative notes from his teachers, when he forgets an assignment or when he misbehaves. In elementary school, he sometimes brought home a positive note, and even if it was very brief, something like 'Great artwork!'—he felt proud. I think teachers should apply positive reinforcement more often than negative. Positive notes are much more motivating."
>
> *Viktoria, mother of a 13-year-old son*

A positive note is easy to write because it is brief and informal. It can be powerful for two reasons: 1) It reinforces a student's positive behavior; and 2) It informs the parent about a school expectation and how the child is meeting that expectation. Many parents who have previously read or heard only criticism of their children are pleasantly surprised to hear about something they can celebrate with their child. Parents are typically quite pleased to receive this type of correspondence. They are grateful that the teacher is taking a personal interest in their child and can see the child's positive attributes. These informal notes often help establish trust between parents and teachers.

Some examples of notes written by teachers can serve as models. One teacher wrote, "Let's celebrate! Janis has finished his ethics homework five days in a row!" Another teacher remarked, "After reading the text, 'The Human Heart,' Eva led her group in creating a drawing of the heart and explaining its functions to the class. Everyone learned a lot!" Yet another teacher wrote, "In the paper that Nicu wrote about the castle, he included a number of facts that he learned by doing research on the Internet, including the various attitudes toward restoring the castle. As a part of his report, he and three classmates engaged in a debate

about the restoration, providing the class with a very good example of listening to others and respecting their views. Well done, Nicu!"

> "I communicate regularly with parents about life in our class. I write 3-4 letters in a school year. I write about what we do, what we plan to do in the future, as well as about our problems. The parents' responses are positive—many of them have said that they liked the letters."
>
> *Anna, English and mathematics teacher*

Many teachers (or teams of teachers) try to reach the parents of all their students with this type of informal communication during the first month of school, in order to establish a positive tone for the year. Some administrators even require such communication. Often parents will write back, thus initiating two-way conversations about the students' progress and the curriculum.

The open house

"Open house helps me visualize the setting in which my children spend their day…. This is an awesome way for families to make connections with staff, teachers, parents, and other students." (Camilla, mother of two students)

As this mother indicates, another practice that can create positive connections between the school and families is the school *open house*. Open houses are informal events that are typically scheduled after school or in the evening within the first months of school. All families receive a simple written invitation to take a self-directed tour of the school and meet the directors, teachers, and other families. Parents with students in the upper grades are sometimes invited to experience the students' exact schedules in abbreviated form. In each class they sit where their child sits and the teacher briefly explains what happens in that subject, or leads the parents in an interesting activity related to the subject matter.

It is important that schools provide a welcoming environment for the open house and, thus, establish a positive association for parents with the school. The open house serves to communicate to parents that the school promotes their involvement in their child's education.

Parents may be included in the planning of the open house and may act as hosts to welcome families as they arrive. Bilingual hosts are especially valuable when the school includes speakers of various languages. To give all families an opportunity to participate, some schools schedule open houses at two or three different times so families may choose the time that best fits their schedules. When relations between families and schools are poorly developed, it may be helpful for the teacher or other parents to make personal contact with families to encourage them to come. While this may seem like a lot of additional work for teachers, many teachers believe that the relationships that develop are worth the effort.

Dye (1989) points out that students benefit when "adult-child language interactions at school…successfully build upon the child's existing knowledge and experience" (p. 21). Teachers may invite parents to share what they feel is important in their children's education by means of a survey made available during the open house. Such a survey can also provide information about learning activities that the parents are doing with their children at home. Listed below are four basic questions that can be adapted for use in a survey about learning activities at home:

1. What learning activities do you currently do at home?
2. What would you like to do?
3. How may we help?
4. What types of activities are not possible for you?

Teachers may also decide to hold *open class* during a week of school. Parents are invited to visit their students' classrooms at any time during that week. The parents observe and participate if they wish. Many parents believe they learn a great deal during these visits about how to interact with their children at home so as to move them forward in their learning. Teachers may also gain insight into how certain parents interact with their children, and how students learn at home.

"I started 'Open Class Week' five years ago. Since then, I have been inviting parents to visit our class twice a year…. Parents can see their children's progress and compare their child with his or her classmates. The parents are invited not just to observe; they can also participate, helping children with writing or reading."

Maria, elementary teacher

Parent–teacher conferences

"If parent–teacher contact is to be informative, it must be open-ended, flexible, reciprocal, responsive to topics of individual interest, mutually constructed, and richly contextualized" (Snow, 1999, p. xiv). The parent–teacher conference is an opportunity for teachers and parents to have a conversation about the student's progress. Often schools schedule two or three parent–teacher conferences during the school year. These conferences can and should be much more than just the teacher telling the parent how the child is performing academically.

One of the primary goals of the conference is to build a trusting relationship between the teacher and the parent(s). "Many parents come to school, to a teacher, with some previous experiences. If these have been negative, then it is up to a teacher to win the parents over… because both parties want the same thing: to prepare children for life in the best possible way." (Katarina, first-grade teacher)

"A teacher will not win parents over by talking only about negatives. If the first meeting parents have with a teacher is pleasant and interesting, it will open the door to good teacher–parent cooperation."

Katarina, first-grade teacher

In light of research suggesting that teachers talk no more than 50% of the time during conferences (Berger, 1999), teachers should engage parents in conversation as equal partners. An agenda can be sent to parents at least two weeks ahead of time, listing topics the teacher will cover. The agenda can also provide a list of questions that the parents might consider asking, such as: Is my child giving his best effort? What can I do to help my child? Is she being challenged enough? (Stanton, 1996). A tear-off portion on which parents can write questions and topics they would like to cover during the conference could be included. Sending the agenda at least two weeks in advance allows time for the teacher to follow up with a note or call to encourage participation, and gives parents time to think about and send their questions.

A variation of the parent–teacher conference is the "planning conference." Early in the school year, parents and teachers (and sometimes students) collaborate to set goals for the student. To prepare for a planning conference, the teacher assesses the student's strengths and needs and assembles samples of the student's work. At the conference, parents are invited to share their goals for their children, and teachers share the data and anecdotes they have gathered. Discussion focuses on how these goals could best be met within both school and home contexts, further enhancing the home-school learning connection.

Chrispeels (1988) offers important considerations for a successful conference experience:

1. If parents live separately, be sure both receive information and clarify who will be attending the conference.
2. The school should arrange for childcare so parents can attend the conference without distractions. Having a comfortable place where parents can wait adds a welcoming touch. While parents are waiting, ask them to fill out a questionnaire about their satisfaction with school programs.
3. If needed, arrange for a translator and let parents know a translator will be available.
4. Negotiate the best times with parents who have several students at the school or who have conflicting work schedules (p. 85).

Parents should be invited to evaluate the conference. Sometimes teachers fear that this will elicit criticism; however, teachers who want to establish positive connections with all families welcome feedback and respond positively to suggestions.

Photo: PhotoDisc, Inc.

Parent education workshops

> "Traditional parents' meetings, which give a parent only brief information about a child's marks and behavior, do not serve to encourage the family-school cooperation we are seeking today. So I decided to organize parent meetings differently. I surveyed parents to see whether they were interested in spending time in the classroom with me and the children. When they responded positively, I started preparing the meeting." (Magda, elementary teacher)

Educators cannot take for granted what parents may or may not know about learning (McCaleb, 1994; Nistler & Maiers, 2000). Besides telling parents that their involvement is important, teachers can suggest what parents might do to be involved. For example, many educators encourage parents to read to their children, take them to the library, or supervise their homework. However, parents need more than just encouragement. Many parents want to know how best to work with their children, and they want to be able to give input to the teachers. From her research with thousands of parents all over the world, Joyce Epstein (1998) concluded that almost all parents have concern for their children's academic success and would like assistance in knowing *how* to help. Maiers (2001) came to similar conclusions:

> Parental participation in learning activities with their children can change the nature of interactions adults have with their child and serve as a catalyst for a variety of learning opportunities. Based on the model that learning is social and interactive, the workshop approach is an effective way to continue your pathway toward partnership with families (p. 120).

Family workshops may vary in topic and purpose, but the goals are always to validate the expertise parents already have about their own children, to add to that expertise, and to support them in using that expertise to help their children learn. Workshops provide an environment in which parents and teachers (and, sometimes, the students) think together. They can explore learning opportunities, engage in discussions, and think critically together about school and community issues. "We meet to participate in some structured activities, which help us all to get along better, and help us to solve problems at school, at home, and in everyday life." (Martina, mathematics teacher)

Parents can benefit from active participation in the workshops in the same way that students benefit from learning by doing. We have found that the ERR framework (Steele & Meredith, 1995) can serve as a template for successful, dynamic family workshops. This

framework comprises three phases of learning: Evocation—introduction, thinking, discussion about the topic, and personal goal setting; Realization of meaning—involvement of the participants in the study of the content; and Reflection—making meaning and personal connections.

Family workshops are most relevant when they involve topics that parents consider important, topics based on their needs and concerns (Delgado-Gaitan, 1991). The parents may be invited to select topics, or the workshop organizers can identify important topics mentioned in the parent surveys. Usually the organizers can find a nucleus of parents who are interested in helping with the planning, advertising, and delivery of the workshop. If most of the children in the school live nearby, parents can use existing networks in the community to reach parents who do not commonly connect with the school. Consequently, a secondary outcome of family workshops is the opportunity for parents to strengthen and negotiate community networks. Many teachers have found that as workshops continue, relationships flourish. Another idea for reaching reluctant participants is to offer workshops in locations outside the school, such as clubs, or to couple workshops with other school events.

In order for parents to benefit from a workshop, they must be actively engaged. One way to help parents feel comfortable enough to participate actively is to begin each workshop with an icebreaker, such as those described by Melvin (2001) in an earlier *Thinking Classroom* issue, or compiled by Steele at http://www.kimskorner4teachertalk.com/classmanagement/icebreakers.html. Icebreakers help build familiarity and encourage the parents to want to work collaboratively.

Although workshop topics are best supplied by parents, it sometimes helps to have some suggestions to get started. As an introductory workshop, parents could participate in a brief, yet engaging, lesson designed to introduce interactive teaching methods. For example, parents and students could read a short, interesting, and provocative text, and then engage in making predictions and discussing their perspectives.

> "I liked this workshop much more than our previous meetings, because we could talk more. Everybody could express his or her opinion, and we learned more about each other."
>
> *Iveta, sixth-grade student*

> "Meetings like this should be organized more often. They contribute to the improvement of parent–child relations. I personally benefited greatly from hearing the opinions of other parents, teachers, and students."
>
> *Jozef, father*

After the lesson, they might be asked to think about how they felt as learners during these activities. They could brainstorm about how they might apply interactive techniques at home or make connections with learning activities already occurring in their homes.

Family education efforts, particularly with parents of varied cultures or linguistic backgrounds, can take many forms. Some involve the creation and sharing of family scrapbooks, the writing or collecting of family stories, or the opportunity for family members to practice reading youth and/or adult texts to improve their own reading skills and knowledge (e.g., Akroyd, 1995; Handel, 1999; McCaleb, 1994).

Just as there is no recipe for the perfect family participation program, there are no set rules for creating family workshops. The format of a family workshop depends on the concerns and desires of those involved. Using surveys and listening to what parents and other adults in families say can provide information about what families want from schools.

Conclusion

More than ever before, societies today need help from schools in preparing students for tomorrow's challenges. Schools introducing a culture of teaching that focuses on the thinking processes of students need to be supported by their communities. Through participation and collaboration, families can become part of a thinking community. In order to initiate and build such collaboration, it is important that educators share ideas for

positive and effective partnerships between home and school. With an emphasis on the value of two-way communication and congruence between home and school learning (Paratore, 2003), we have described four school practices that can increase family involvement: informal messages, the open house, parent-teacher conferences, and parent education workshops. It is our hope that the ideas presented here will stimulate teachers to meet the growing need for successful partnerships between families and schools.

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Penny L. Beed is a member of the Literacy Education Faculty at the University of Northern Iowa, Cedar Falls, IA, USA. E-mail penny.beed@uni.edu.

Amy M. Sandvold is a reading specialist at Hansen Elementary School, Cedar Falls Community Schools, Cedar Falls, IA, USA. E-mail sandvold@cfu.net.

Marcela Maslova is Program Coordinator for the Orava Association for Democracy in Education in Dolny Kubin, Slovak Republic. E-mail marcelam@projectorava.sk.

James V. Hoffman, Natasha Beretvas, P. David Pearson, Cynthia Hugo, and Bertus Mathee

Improving Literacy Instruction in South African Schools:

The Business Trust's Learning for Living Project

Nelson Mandela observed that to understand the true character of a nation you have to spend some time in its prisons. As educators, we believe that spending some time in a nation's poorest schools can also provide insight into its character. Over the past several years we have been spending time in the poorest of South Africa's schools. In this report we describe our recent experiences working in South African rural schools with a project designed to improve the quality of literacy education in the primary grades. We believe that these experiences in South Africa are instructive with regard to the challenges and opportunities faced by developing countries across Africa and, indeed, around the world.

Background

Education Reform in South Africa

South Africa is a country filled with contrasts and contradictions. Despite the country's rich natural resources, poverty is a way of life for the vast majority of South Africans—in particular, for black South Africans. South Africa has a first-class private health care system with some of the finest medical schools in the world, and at the same time it has one of the highest incidences of HIV/AIDS infection on the African continent. South Africa is the largest exporter of agricultural products in Africa, but most of its citizens live on a subsistence diet. The education system displays similar disparities between the poor and wealthy. During apartheid rule, "Bantu" (black) education policies were formalized with the implementation of the Bantu Education Act in 1955. As a result of these policies, schooling for the black majority was segregated from schooling for the white minority. The school system for blacks was inferior, with only the most basic of skills being taught, thereby restricting opportunities for blacks.

But South Africa is changing. Today, South Africa is in the midst of a cultural and social revolution unprecedented in both scope and scale. Emerging from years of apartheid rule and these Bantu educational policies, the new South Africa has made a commitment to democratic rule and has established education reform as a key element in transforming the society and the economy. The education department has initiated a paradigm shift, moving from a focus on rote learning to an emphasis on active learning; from transmission of information to learner-centered models of teaching; from fact-based testing and normative assessment methods to outcome-based, problem-centered, continuous assessment. The challenge is enormous. Resources in poor rural schools are scarce. Close to 90% of the education budget is spent on teachers' salaries, leaving little to build adequate school buildings, provide desks or books, or upgrade the skills of the many under-qualified teachers.

Further complicating the situation is South Africa's language diversity. There are 11 official languages, and government policy provides for first-language instruction during the "foundation" phase (the first three grades), which makes enormous sense in this context. However, developing the capacity to deliver quality instruction in all these languages remains an enormous challenge for the education system. Beyond

the foundation phase, English serves as the primary medium for instruction in most South African schools. Therefore, the development of English-language literacy was the initial focus for this evaluation and is the primary subject of this report.

The Business Trust's Learning for Living Project

The Business Trust is a private foundation in South Africa that has made a major commitment to education reform. In April of 2000, the Business Trust committed R153 million (approximately US$15 million) to a five-year project that involved providing 957 primary schools with carefully chosen resources and materials, and mentoring 11,927 teachers. The project, directed by the READ Educational Trust of South Africa, will eventually reach over one million learners. To our knowledge, this is one of the largest privately funded educational improvement efforts ever undertaken in the world.

The Business Trust has contracted for an independent/external evaluation plan for the project. This external evaluation, directed by Eric Scholar and Associates, established baseline data on 90 schools (60 schools working with READ in the Business Trust project and 30 comparison schools not participating in the project) situated in 23 districts around the country. The project schools are mostly in rural areas, previously known as "the homelands." The project schools were matched to comparison schools on the basis of demographic characteristics and qualities.

The Internal Evaluation Plan

Under the auspices of the International Development Division of the International Reading Association (IRA), and with additional support from the Rockefeller Brothers Foundation, two of the authors of this report (Professors James Hoffman and David Pearson) began working as consultants to READ in the Business Trust project in early 1998. Natasha Beretvas, also supported by IRA, joined the project in 2002 as a statistical consultant. In July of 2000, the READ Educational Trust worked to develop an internal plan for student assessment that could become the basis for evaluating program impact. James Hoffman and David Pearson developed tests to be used in the evaluation for each of the grade levels 2 through 7. The tests include word recognition, spelling, listening comprehension, silent reading comprehension, oral reading, fluency, and writing (composition and mechanics), and are designed for use in both individual and group assessment contexts. All of the texts used in the assessments are drawn directly from READ curriculum materials; in short, they were written to be more reflective of the curriculum than the assessments used by the external evaluator of the project.

The First Two Years

What follows is a brief summary of the findings from the first two years of the internal evaluation of the Business Trust project. The baseline data collected by the external evaluators prior to the start of the intervention revealed no significant differences in learner achievement in reading and writing levels between the READ project schools and the comparison schools.

Year 1

In accordance with the evaluation plan, trained READ coordinators and specialists conducted an internal evaluation in July of 2001. A team of four to six data collectors was formed in each province. Each team was responsible for the testing and scoring in the three target schools in that province (two READ project schools and one comparison school). The data from Year 1 provide compelling evidence for the positive impact of the Learning for Living Project on student achievement. The achievement gains favoring learners in project schools were broadly based and covered the spectrum of language, reading, and writing skills. An external evaluation was also conducted by Eric Scholar and Associates at the end of Year 1, utilizing an even larger sample and with tests not tied directly to the READ curriculum, and it too showed the project to have a significant impact on student achievement.

While these findings were encouraging, there was no way to compare the

performance levels to a healthy national standard. To explore this issue further we collected additional data from students in two schools in Gauteng (Johannesburg and Pretoria area) serving urban families of middle- and upper-middle-class income levels. The Gauteng schools were previously under the administration of the Transvaal Education Department, and thus have a history of having excellent resources and fully trained teachers. During the apartheid years these schools were exclusively white. Today, they are integrated racially, but their resources still far exceed those of the rural schools. In comparing test scores (for grades 4 through 7) from these schools with scores from the READ project, we found an enormous disparity: In all areas of common assessment (across grade levels), Gauteng students in the lowest grade level (grade 4) scored higher than the grade 7 students from the READ project schools.

Figure 1 **Example of Pattern of School Differences Using Listening Comprehension Scores by Grade**

Grade	Group	Mean	(SD)	N
3*	Control	2.2	(1.7)	172
	Read	2.7	(1.6)	317
	Select	3.7	(1.9)	178
4*	Control	2.4	(1.8)	161
	Read	3.4	(1.8)	351
	Select	4.1	(1.5)	178
5	Control	3.6	(1.6)	174
	Read	3.9	(1.6)	345
	Select	5.0	(1.1)	186
6*	Control	2.7	(1.4)	165
	Read	3.1	(1.3)	359
	Select	4.3	(1.3)	179
7	Control	4.5	(1.4)	170
	Read	4.7	(1.4)	341
	Select	5.5	(0.9)	162

Note. When a grade number is followed by an *, that indicates that a significant difference ($p < .05$) was found between the Read and control schools' means.

Year 2

The Year 2 (2002) evaluation utilized the same basic tests as in Year 1 (2001), and again tested the same schools (two READ project schools and one control school). However, there were some modifications. We added one additional school in each province. These new schools were chosen by asking the READ staff in each province to nominate a "Select" READ school, one that had achieved high levels of program implementation.

Data from approximately 4,164 students were collected as part of the Year 2 evaluation. Our analyses of these data suggest that students in the original READ project schools (not including the Select schools) performed significantly better than the students in the comparison schools. As an illustration, consider the data for the Listening Comprehension test across school categories presented in Figure 1. The general pattern of student performance, consistent in nearly all of the sub-test areas, indicated that Select READ schools had the highest levels of performance, followed by READ project schools, followed by comparison schools. Table 1 contains standardized

Table 1 **Effect Sizes for Differences Between READ Project and Comparison Schools by Test and by Grade**

	Grade					
Test	2	3	4	5	6	7
Listening Comprehension	-	.52	.89	n.s.	.41	n.s.
Reading Comprehension	-	-	.77	.82	.30	.64
Language/Grammar	-	-	.56	.74	.63	.68
Writing Composition	-	-	1.04	.70	.37	.28
Writing Mechanics	-	-	1.21	.80	.24	.49
Spelling	.73	1.00	1.27	.68	.51	.67
Word List	.64	.66	1.29	.67	.40	.55
Reading Rate	-	-	.68	.36	n.s.	n.s.

Note. Not all tests were administered to all grade levels. These cells are identified in the Table with -. Cells where differences were not significant are identified with n.s. Cells for which a significant difference was found favoring READ over comparison schools' mean scores contain the value of the associated effect size.

Table 2 **Effect Sizes for Gains from 2001 to 2002 by Test and by Grade for READ Project Schools**

Test	Grade 2	3	4	5	6	7
Listening Comprehension	-	-	.70	n.s.	n.s.	.47
Reading Comprehension	-	-	.80	.79	n.s.	.69
Language/Grammar	-	-	n.s.	n.s.	.73	.88
Writing Composition	-	-	n.s.	.43	n.s.	n.s.
Writing Mechanics	-	-	n.s.	.56	n.s.	n.s.
Spelling	-	n.s	1.05	.46	n.s.	1.61
Word List	.78	n.s	.63	2.69	n.s.	1.15
Reading Rate	-	-	n.s.	2.49	n.s.	.67

Note. Not all tests were administered to all grade levels. These cells are identified in the Table with -. Cells where differences were not significant are identified with n.s. Cells for which a significant difference was found favoring Year 2 mean scores contain the value of the associated effect size.

Table 3 **Effect Sizes for Gains from 2001 to 2002 by Test and by Grade for Comparison Schools**

Test	Grade 2	3	4	5	6	7
Listening Comprehension	-	-	n.s.	n.s.	n.s.	n.s.
Reading Comprehension	-	-	n.s.	n.s.	n.s.	n.s.
Language/Grammar	-	-	n.s.	n.s.	n.s.	n.s.
Writing Composition	-	-	n.s.	n.s.	n.s.	n.s.
Writing Mechanics	-	-	n.s.	n.s.	n.s.	n.s.
Spelling	-	n.s.	n.s.	n.s.	n.s.	2.56
Word List	n.s.	1.62	n.s.	2.70	n.s.	n.s.
Reading Rate	-	-	n.s.	2.30	n.s.	n.s.

Note. Not all tests were administered to all grade levels. These cells are identified in the Table with -. Cells where differences were not significant are identified with n.s. Cells for which a significant difference was found favoring Year 2 mean scores contain the value of the associated effect size.

effect sizes describing the statistically significant ($p < .05$) differences, which support our finding of greater performance gains in the READ schools.

A second important finding of the Year 2 evaluation was that students in READ project schools improved their performance levels substantially from the Year 1 evaluation. We compared the Year 1 performance with Year 2 both for the READ project schools and for the comparison schools. The data in Tables 2 and 3 illustrate the findings for this comparison. The tables provide the value of the standardized effect size for the cells for which the average of schools' mean test scores significantly ($p < .05$) increased from Year 1 to Year 2. Given the number of different sub-tests and grade levels tested, there were a total of 35 opportunities for schools to exhibit improved performance. As shown in Table 2, out of a possible 35 comparisons, the average test scores in READ project schools increased significantly in 18 cases (51.4%). The data for the comparison schools (Table 3) show an increase in the average scores in only 4 of the 35 possible cases (11.4%).

A third important finding in these data is that the performance of students in the Select READ schools is approaching urban standards. As reported earlier, in the Year 1 comparison the difference in performance between students in the READ project schools and students in well-equipped Gauteng schools was staggering. In Table 4 we present data describing the performance of the Year 2 Select READ schools, as compared with Year 1 evaluation data for the READ and Gauteng schools. Although there are still significant differences ($p < .05$) favoring the Gauteng schools across the majority of the tests, there appears to be some reason for optimism.

Table 4 **Means (and Standard Deviations) for Scores of READ 2001, Select READ 2002, and 2001 Gauteng Schools by Test and by Grade**

Test	Grade 4			Grade 5			Grade 6			Grade 7		
	2001 READ	Select READ	2001 Gauteng	2001 READ	Select READ	2001 Gauteng	2001 READ	Select READ	2001 Gauteng	2001 READ	Select READ	2001 Gauteng
Listening Comprehension	3.00 (.78)	4.21 (.87)	5.10 (.12)	3.93 (.92)	5.03 (.67)	5.58 (.27)	3.29 (1.03)	4.29 (.68)	5.35 (.09)	4.44 (.65)	5.48 (.29)	5.90 (.08)
Reading Comprehension	2.50 (.81)	4.19 (1.02)	5.48 (.15)	3.14 (.93)	4.40 (1.01)	5.23 (.41)	3.88 (1.13)	5.04 (.61)	5.66 (.32)	3.16 (.75)	4.43 (.69)	5.29 (.29)
Language/ Grammar	2.51 (.97)	3.10 (.91)	5.66 (1.68)	2.63 (.96)	4.04 (1.14)	5.26 (.25)	2.65 (.96)	4.64 (.77)	5.90 (.07)	2.47 (.87)	4.45 (.76)	5.68 (.16)
Writing Composition	.56 (.37)	1.03 (.41)	1.01 (.41)	.57 (.43)	1.25 (.74)	1.25 (.39)	.98 (.52)	1.71 (.36)	1.28 (.39)	1.10 (.47)	1.61 (.62)	1.48 (.49)
Writing Mechanics	.50 (.34)	.83 (.34)	.73 (.32)	.50 (.34)	1.11 (.81)	.99 (.40)	.88 (.49)	1.31 (.34)	.91 (.39)	.84 (.38)	1.30 (.59)	1.09 (.32)
Spelling	5.25 (1.68)	8.18 (1.85)	10.93 (.61)	6.39 (1.79)	8.59 (2.18)	12.18 (.77)	7.43 (2.09)	10.01 (1.83)	12.81 (.47)	7.27 (1.55)	10.62 (1.44)	13.34 (.69)
Word List	21.14 (7.71)	28.23 (7.81)	35.46 (3.17)	6.39 (1.79)	31.89 (6.65)	39.16 (.90)	31.71 (4.13)	35.64 (4.89)	41.84 (.75)	31.62 (4.83)	39.23 (3.65)	43.26 (.80)
Reading Rate	66.19 (21.0)	81.67 (22.06)	107.25 (6.43)	24.91 (7.15)	82.84 (25.89)	111.04 (5.58)	77.95 (19.0)	96.60 (24.20)	126.19 (11.11)	70.45 (28.7)	113.08 (20.48)	138.41 (5.20)

Learning Lessons for and from South Africa

Edward Tenza, one of the original founders of READ and a former high school teacher in Soweto township, is fond of quoting a proverb in reference to our consultancy work with READ: "If you want to learn a lot, you have to travel a long way." We have certainly traveled a long way, both physically and metaphorically. We are certain that what we have learned can benefit those who work with literacy in developing economies across the world. The work underway in South Africa and our continuing evaluations of the Business Trust project will be instructive for all who share a commitment to literacy as a tool for nation building. We have identified a number of points that we feel are important to share:

- *Private investment and partnerships can work*. We cannot ignore the fact that in the Learning for Living Project, measurable improvements in education were achieved through an initiative financed entirely by the private sector. The boldness and importance of this unprecedented investment should not be underestimated. The willingness of the private sector in South Africa to shoulder a share of responsibility for improving education is remarkable. To be clear, this is not a case of the private sector attempting to displace or disrupt public education. It is a case of working collaboratively toward shared goals.
- *Close collaboration with the Ministry of Education is essential*. The READ Educational Trust, because of its relatively small size, is not saddled with the kind of bureaucratic structures that make reform difficult in public education. However, READ cannot simply go its own way without regard to public education agencies if it is to have an impact on the entire country. READ must collaborate and work closely with the national and provincial ministries of education, to ensure that the programs offered are in line with national goals and priorities. Fortunately, READ staff and the education ministries are working to create close working relationships and a sense of co-ownership of project initiatives.
- *Neither better material resources nor professional development can be considered sufficient on their own; both are necessary*. There was a time when the fundamental challenge in literacy

Photo: Misty Sailors

Learners working with text in school served by READ

education in the developing world was understood as a matter of insufficient materials. But even quality materials can only take a school or a nation so far. Ultimately, the quality of the teaching force using these materials must be considered. READ invests in both: developing quality materials that reflect the South African context; and providing teachers with in-depth instruction, modeling, and coaching in the use of these materials.

- *School context cannot be ignored.* While the learners are the ultimate focus for the interventions, and the teachers are the primary agents of change, the context must be considered as well. READ focuses on the entire school in its intervention. Principals and community leaders are part of the READ professional development plan. The goal is to create a context that supports change.
- *Creating a culture of assessment that guides teaching is a powerful leverage point in promoting reform.* We have worked actively to encourage teachers to use informal assessments (e.g., curriculum-embedded assessments, dynamic assessments, and informal assessments) as a guide for responsive teaching. This message is working. Good teaching is driven by assessment. These assessments have also been a crucial source of accountability and evaluation within the READ staff development plan. Resources and support can be directed more effectively to points of need, based on the assessments we have conducted.
- *Language issues are puzzling and complex.* We wish there were a simple formula for coping with 11 different official languages in a society where fluency in one language (English) helps ensure access to economic opportunities. However, there is no easy answer. READ is providing teachers with professional development for working with second-language issues, and it is now in the process of evaluating the impact of first-language reading materials on student learning. We must continue to explore the impact of these innovations and encourage the creation of a supportive policy environment for teaching and learning in multiple languages.
- *The commitment needed to succeed must be long-term.* To expect that a single project like the Business Trust project will promptly eliminate the differences in achievement is to encourage false hope. The struggle will be a long one. We must be prepared to invest our resources and our enthusiasms for many years to come. Our data from the Year 2 evaluation suggest that progress toward the goal is measurable and achievable.

The "Long Walk" Ahead

Nelson Mandela spent more than 25 years in South African prisons and described his experiences in his personal autobiography as *The Long Walk to Freedom*. He wrote of almost unimaginable conditions of racism but also wrote of determination, hope, and reform. The conditions in education in South Africa are a product of its history and demand attention. In the time we have spent in the poorest schools in South Africa we have found ourselves both troubled and

inspired. We visited one second-grade classroom in Mpumalanga Province that had over 90 students in a room measuring about 24 feet by 24 feet, with only ten desks and two small windows. The students in the class ranged in age from 8 to 15. Almost all of them were refugees from Mozambique who spoke a dialect not found in South Africa. None of them spoke English fluently, yet they were being taught the English curriculum. For South Africa these conditions are extreme, but they are not far from the norm in the broader Pan-African context, where national resources are even more limited. On such days we found ourselves wondering out loud about the potential impact of our efforts.

On most other days, however, we found ourselves in classrooms where the evidence of READ's additional resources and teacher education was clearly apparent. Yes, the conditions were less than ideal (e.g., large class sizes, large age ranges within grade levels, and multiple first languages of the students). But, the teachers' commitment to success was evident in their work and in the way in which they spoke of their students. There was energy and optimism on the part of the students, based on their vision of a different South Africa and their place in it.

Policy makers are—and must be—concerned with issues of return on investment. This is not simply a principle that guides decision making in a business context, but also a principle that guides the allocation of scarce resources to social services like education. It applies not only in the developing world but in all countries on all continents. What is the relationship between costs and outcomes in this project? The cost estimates for the Business Trust's Learning for Living Project are calculated at 50 South African rand per year per student beyond the current spending levels for education. At today's currency exchange rates, 50 rand is less than seven U.S. dollars per pupil. Our data document significant gains in achievement as a function of this additional investment. Over the five years of the project the lives of over one million learners will be affected. We hope that our data, our words, and the experiences we have related will encourage greater investment in education in developing countries around the world.

Photo: Misty Sailors

Gail Pillay, a READ trainer, and Brian Prehn, the area coordinator, working in a Grade 1 classroom in Cape Town, South Africa

James V. Hoffman is Professor of Language and Literacy Studies in the College of Education at the University of Texas at Austin, TX, USA. E-mail jhoffman@mail.utexas.edu.

S. Natasha Beretvas is an Assistant Professor in the Educational Psychology Department at the University of Texas at Austin, TX, USA. E-mail tasha.beretvas@mail.utexas.edu.

P. David Pearson is Professor and Dean of the Graduate School of Education at the University of California, Berkeley, CA, USA. E-mail ppearson@socrates.berkeley.edu.

Cynthia Hugo is National Director of the READ Educational Trust in Johannesburg, South Africa. E-mail cynthiah@read.co.za.

Bertus Mathee is Training Manager for the READ Educational Trust in Johannesburg, South Africa. E-mail bertusm@read.co.za.

The READ Educational Trust of South Africa

Misty Sailors

The READ Educational Trust (Read, Educate, And Develop) is an independent, non-governmental South African organization (NGO) supported by private contributions and contracts, both small and large. In some cases, a single donor supports a single school, supplying funds for the costs associated with participation in a READ project. In other cases, funding supports many schools throughout the country. An example of this is the single largest project to date, the Learning for Living Project. In all, READ is in direct contact with approximately 12,000 teachers in over 1,000 schools in South Africa.

The work of READ centers on (1) placing high-quality instructional books in the hands of children in South African schools; and (2) intensive instruction and support for teachers on how to use the books in order to maximize literacy learning. READ's philosophy is rooted in the outcome-based teaching methodologies identified in the South African 2005 National Curriculum (revised). READ has adopted a whole school approach to change that is inclusive of principals, teachers, and community leaders. The professional development is systematic, intensive, responsive, and sustainable. READ's office in Johannesburg is home to the directors, administrative staff (e.g., grants, contracts, financial services), and materials developers. The provincial coordinators, managers, and trainers are based in regional offices located around the country. The commentaries that follow are drawn from personal interviews with selected individuals representing the various roles and perspectives within the organization.

Commentaries

Edward Tenza, Senior Associate and Co-founder of READ: *The formation of our organization was a direct result of the educational crisis in Soweto in 1979. The student demonstrators were burning public buildings, including libraries, in protest of the educational policies of the apartheid regime. [The founders of READ, including] several principals and Cynthia [Hugo, now the National Director], came together to raise money from the private sector to rebuild those libraries and stock them with books. We gave the name of READ—Read, Educate, And Develop—to the new organization and decided that all children throughout South Africa would benefit from the work we were doing. Now that work includes teaching all children English, which is important. English is an international language, and if we want our children to go out into the world they must know English…. If we teach our children in only Sotho and Zulu, no one will listen to them and no one will understand them when they go out into the world….*

Our goal is to transform education in South Africa—to have everybody in the country literate, the children and the parents. In our 24-year history, we have reached 13 million learners. We have done a lot of what we set out to do, but we still have more work to do.

Cynthia Hugo, National Director: *When we began READ in 1979, we started small. Everyone who was a part of the organization volunteered the first few years, and we were absolutely determined. Edward [Tenza] and I had a vision that the children in this country deserved a better chance. [We started a program to] put books in classrooms across the country, both at the high school level and the primary level. We quickly realized that placing books in libraries was not enough; there had to be training to go along with the books. There never has been a shift in the vision of READ: That every child deserves to have access to books. One of the most amazing things about READ is that it has caught the vision of the people…. Now we are a catalyst of change. The [provincial] department of education is quite supportive of the work we do….*

Now we are taking the model to the next level. We are trying to get the schools to self-actualize, to use everything in their own way, and that's difficult. Some of the schools are absolutely amazing. You go into these schools that are mostly in rural areas and the kids are reading!…You can see how much the books really mean to them. I think it's their only chance. They're not going to have the wider world in their villages, but they do have books.

Bettine Nixon, Materials Developer: *The creation of the course for teachers that accompanies the books and materials we place in classrooms is one of the most important things READ has done. Our program is based on the work of many outside experts, such as Professor Warwick Elley.* [Editor's note: Warwick Elley is Emeritus Professor of Education at the University of Canterbury in New Zealand and a world authority on literacy.] *[The] program represents what has come to be called a "balanced literacy program," [incorporating] the methods of read-aloud language experience, and shared and independent reading and writing. We start with what current theory says about learning to read and…our trainers show teachers how to develop reading and writing skills in context….*

We seek out materials that are high quality, written well, well illustrated, a reflection of the children in South Africa, and that help students become independent readers. Some of these materials are published in South Africa; but publishing in South Africa is not a profitable enterprise, so many of our books come from other countries. After we select the books…we write teacher's guides [that] support teachers as they are implementing the new methodologies in their classrooms…. Our teachers are excited about what they can take back to their [schools]. For many of them, this is a new approach to teaching.

Cecilia Ntloheleng Lukhele, Provincial Manager, Gauteng Province: *My job is to do quality checks in each of the regions. I take a team into the provinces and we check the standard of performance, the quality of training, delivery of training, implementation of our methodologies, and the use of our resources. We talk to the principals in the schools, and we do observations in classrooms. We talk to learners while we are there, too. When we visit a school and the methodologies are well implemented, that is a compliment to the trainer…. People ask me if I miss teaching, but I say no. Through my work with READ, I'm always with learners and I'm always teaching.*

Brian Prehn, Regional Coordinator, Eastern Cape: *One of the most vital aspects of what I do is to help support the teachers in the classrooms in my province. You can do the training of the trainers, but unless you can say to the teachers, how is it going?, how can we help you?, it's not enough. The schools we are working with haven't had that kind of support before. It took the teachers a while to be able to trust us, but we have now established that trust with our teachers and our schools. After three or four years, the teachers have come to believe that we really mean what we say…. If you want to get the best out of people, you have to support them….*

My job is not just a job; it has become a way of life. It is demanding but very interesting. One of the greatest things about working for READ is that I get to see a lot of the good things happening in the Townships now, like the mother who can't read or write herself but makes sure that her child comes to school to learn. That's what it is all about.

Gail Pillay, Trainer, Eastern Cape: *Our first goal is to train our teachers how to teach reading. The training that we give them is quite intense, systematic, and thorough. We are in their classrooms and we monitor their lessons…. [But] we are not just people who come into their rooms and make evaluations about what they are doing. Rather, we want them to see that through these projects we are all learning together. I see that my teachers have become more confident teachers as a result of our work together….*

To make sure that the projects in which we are involved are sustained over time,…we work to create independence in our teachers,

much as they are working to create independence in their learners…. We are opening doors to teachers through our work, and the teachers are then opening doors to their students.

Ciae Joseph Moathudi, Grade 4 Teacher, Limpopo: *Working with the READ project has inspired me. What is important about READ is the way we approach classroom learning. It is different from previous ways. Through the program that READ has brought us, the learners can now speak better English. They are improving on a daily basis. This is because of the interesting books; we all learn from them.*

Our workshops and my trainer have made me a better teacher…. Some say teaching in a classroom with so many learners is impossible, but then how do you change that? You teach in ways the learners find interesting, and you give them interesting stories. We help each other. And that is what we are doing with READ—helping each other. When we give each other this chance, like READ has given us, we will see a better South Africa.

Selina Sibija, Principal, Soweto: *The READ materials for our learners are simple, straightforward, and colorful. The story-nature of the books is very familiar to our children [because they] are Venda speaking and they come from a storytelling culture. They hear stories at their homes from their grandparents, and so, to the children, it makes sense that everything is a story. But READ also supplies us with nonfiction books. When people come to test our reading level, we find our children are about two years ahead.*

We were trained and monitored by READ at one time, but we are now self-sustaining. READ seldom comes now, only to check on us, bring us visitors, or give us extra materials…. [Other educators] in South Africa have phoned us and asked us if they could come and see what we are doing:...how we apply this methodology, and how we make assessments and evaluations….

The community is very, very excited; in fact, we have a lot of parental involvement…. When we first started with READ in 1990, our parents did not work with their children at home because they themselves could not read and write in English. Many of our community is unemployed, 60% in fact. We have had many meetings with the parents, and we show them how to interact with their children at home. They are proud of what their children can do….

Misty Sailors, Assistant Professor, University of Texas at San Antonio: *In addition to my work with the ongoing evaluation of the Business Trust project, I had the privilege of conducting a series of READ workshops on reading and writing in Soweto. I worked with trainers, administrators, and teachers who share a vision for South Africa and who are willing to put themselves on the line to promote significant changes in schools. As I think back over my personal experiences in South Africa and the words of those with whom I write, I am struck by the enormity of the challenges, the complexity of the effort, and the remarkable optimism and resiliency of the participants.*

In this article you hear the voices of only a few of the thousands who work with READ. But their comments do represent the perspectives of people who work in these roles and, taken together, offer a collective vision that drives large-scale efforts such as this. Their message? There are no easy solutions, no "silver bullets" or "quick fixes" to the challenges of educational reform. No "boatload of books," no set of curriculum documents, no commercial programs, and no single approach is going to make education reform work; it takes knowledgeable, committed, supportive individuals who work together over extended time periods toward a common goal.

READ was conceived and born from a need and grew within a [South African] context that has given it its own character. [But] the seeds of similar organizations are to be found in other countries. Those who support international literacy reform must work to identify and support emerging groups such as READ, and help those groups identify supporters both within and outside of their region.

Misty Sailors is Assistant Professor of Literacy Education in the department of Interdisciplinary Studies and Curriculum and Instruction at the University of Texas at San Antonio, TX, USA. E-mail msailors@utsa.edu.

Bahar Kerimova

Evaluating Group Work

One of the most widely used interactive learning strategies is group work. Its popularity stems from the fact that it offers a wide range of possibilities: It allows the class to cover much more material than is possible during a traditional lesson, it gets all the students actively involved, it allows the teacher to tailor activities to the different abilities of different groups, etc.

In my experience—which includes presenting more than 35 workshops on interactive teaching methods through "Reading and Writing for Critical Thinking" (OSI Azerbaijan), "Active Teaching Methods" (UNICEF), and "Education Reform" (the World Bank and Azerbaijan Ministry of Education), involving over 400 teachers from secondary schools and teacher training institutions—most teachers encounter problems with group learning strategies. One of their most common and most serious concerns is: *How can a teacher assess students who are working in groups?*

Any activity that allows for improvement requires some form of evaluation, and the primary activity of students is learning. Therefore evaluation is a vital component of virtually any educational model.

Evaluation is a very broad concept, including both the learning process and its results. Therefore, evaluation may assume many forms:

1. Quantitative assessment (usually a measurement of information acquired)
   - A grade assigned by the teacher; or
   - A numerical test score
2. Qualitative assessment
   - Verbal description of the process and product of the work; or
   - Subjective (emotional) reaction

As can be seen from the above alternatives, evaluation is not simply a matter of grades. Each teacher needs to make his or her own decision about what is more important:

- To evaluate the learning process itself, with the goal of teaching each student the skills of self-evaluation, so he can recognize the strengths and weaknesses in his own work and to look for ways to improve it; or
- To assign a grade based solely on the information a student has acquired—and reproduced—on any given day.

Many teachers choose the former, because they truly want to instill in students a desire for learning, an interest in research. However, this choice brings with it certain inevitable difficulties, specifically:

- "It is difficult to evaluate and assess students' knowledge when we speak of questions that have no single correct answer." (Zair-Bek, 2001, p. 41)
- The subject of the evaluation is changed: "The result of a student's work…becomes less important than the process itself…[i.e.] the way a child thinks and explains." (*ibid.*)
- Traditional forms of assessment deal only with the students' knowledge. During group work students are not only acquiring knowledge, but are also developing relevant skills and abilities. Traditional assessment does not allow for adequate evaluation of these factors, and therefore cannot give the student any point of reference regarding these skills or

scaffold his further self-development in these areas.
- In evaluating group work students need to become equal partners with the teacher, taking responsibility for their own achievements and learning how to evaluate their own work.

During my workshops I have often had bewildered teachers claim that there was no way at all for them to assess students during group work. They ask questions such as:

- Is it even possible to evaluate group work, and if so, can it be done objectively?
- How can a teacher assign grades for group work?
- How should a teacher evaluate a group when one or two of its members did all the work, and the rest did nothing?
- If a group does well on an assignment, and some members of that group are very weak students, what grades should the various members receive?

In my work as a teacher of Interdisciplinary Studies (a course that explores philosophical categories and laws common to all the sciences), I myself have faced the problem of evaluating group work. In this article I offer one possible solution, which I developed in collaboration with my sixth-grade students. My objective was to develop the students' ability to evaluate their own work, and that of their classmates, during group activities.

Developing an evaluation method

During our very first class I explained to the students that we would occasionally be working in groups. We then discussed the rationale behind group work, and why it might be desirable. Then I asked the students, "What do you think—do we need to evaluate our group work?"

They answered in the affirmative, so naturally I asked them how they thought this should be done.

> Students: *Whether the group did well or badly.*
> Teacher: *What do you mean by* well *or* badly*? How would we determine that? On what would we base this judgment?*
> S: *Say one group finished the assignment, and another didn't.*
> T: *What else?*
> S: *Whether the group members worked together.*

Thus, together we started to create a chart of evaluation criteria on the blackboard. Taking all their suggestions into account, we came up with the following criteria: *originality of ideas; ideas contributed by the "audience" to the "presenters"; identifying errors in another group's presentation.*

I asked, "Can you think of any additional criteria?" They added:

- *Meeting deadlines*
- *The group's behavior*

We decided that *behavior* included speaking quietly (not shouting), not bothering the other groups, etc.

Using all the criteria, we created a chart for evaluating group work (Table 1).

When the groups received their assignments and started working, I walked among the tables, filling in my own evaluation chart. At the same time, I offered words of encouragement to the students who were working well together and following the established rules of behavior. I made appropriate notations on the chart on the board (at this stage the only marks were in the columns for *behavior* and *cooperation*).

When the groups presented their reports to the class, the listeners were expected not just to sit and listen, but also to ask questions, correct any errors,

Table 1 Group Evaluation

	Scope of material	Originality of ideas	Additional contributions	Behavior	Cooperation	Total score
I	+	+	+++	+	+ +	8
II	+	++	++	+++	+++	11
III	-	+	+	++	++++	8
IV	+	+	++	+++	++	9

and offer additional information. At this stage we filled in the remaining three columns of the chart. (Each group could receive several additional plusses.)

When we finished with the presentations, I asked the class:

Well, folks, who do you think asked the most questions today? Who added the best comments? Corrected someone else's errors? *As the students named various classmates, I could objectively award extra credit to those students who contributed the most.*

Results of using evaluation charts

It is actually very difficult to organize the groups so that all students participate actively in the work. Furthermore, it is not easy for students to learn to evaluate themselves and their classmates objectively. I have encountered all these problems in my own work, but have managed to overcome them using the evaluation method described above. I have felt truly successful with this method when students stopped coming up to me after class and asking, "What grade did you give me today? Why?"

In fact, the students now feel little need to refer to me at all when they are working in groups. Some colleagues from the US who were observing such a class asked, "How do you manage to get them to work so independently? They do not even look at you when they are presenting their reports. They just listen to one another, ask questions, correct each other's mistakes."

I answered that at this point I always tell the class, "Imagine that I am not even here. You are the teachers; you are the ones who will be evaluating one another's work." In my opinion, the most important thing I can do is to teach students how to learn, and to generate enthusiasm for the learning process through objective evaluation of the process.

In summary, here is an outline of our procedures for evaluating group work:

1. **Develop criteria for evaluation in cooperation with the students**
2. **Construct a chart that incorporates those evaluation criteria**
3. **Evaluate work**

Both the teacher and the students conduct an ongoing evaluation using the chart. The chart can be completed using + and – signs; or you may prefer to avoid negative evaluations and focus on the positive, using only + signs.

(Note that criteria such as behavior *and* cooperation *apply to work within the groups, and can be evaluated throughout the class period; while* scope of material *and* originality *would apply to the finished presentations. Teacher and students work together to fill in these sections of the chart.)*

4. Final assessment

On the basis of the completed chart, the teacher and students together decide what grade each group should receive. The teacher asks the students to justify their decisions. If necessary, especially when the class is first introduced to these procedures, the teacher can draw students' attention to significant events or crucial points they may have overlooked.

5. Discuss the results

The class should discuss any aspects of their activities that might affect future work in class, e.g.,

- strengths of each group
- difficulties encountered
- resolution of these difficulties

Of course it is also possible for a teacher to use this type of evaluation chart without input from the students. But in this case it is important that the teacher explain the reasons behind each + and – on the chart. It is really better to involve the students in the process, for several reasons:

1. The teacher resolves the problem of objectivity in grading, and at the same time the students are actually grading themselves, with the help of their classmates. The criteria have been agreed upon in advance. The individual student, his classmates, and the teacher all share responsibility for the process, for ensuring a fair and objective assessment of what the student has learned.
2. The students develop the skills needed for objective evaluation. These skills will be valuable to them in the future in assessing other phenomena, such as work and social situations. The students come to recognize that any evaluation must be based on specific

criteria. And the more precise and appropriate the criteria, the more objective the assessment. The process of developing assessment criteria also develops students' critical thinking skills.

What are the overall advantages of the evaluation process described here?

1. When evaluation is an ongoing process conducted throughout the class period, it helps to ensure that nothing will go unnoticed, nothing will be overlooked, **nothing will be forgotten by the end of the class** when it comes time to assign grades.
2. The evaluation chart provides a visual representation of students' accomplishments, encouraging them to **regulate their activities** and allowing them to **influence their own grades** in the course of the class. By providing a clear picture of various groups' strengths, the chart also fosters **a healthy competition among the students**.
3. By taking into account originality and additional contributions, this type of evaluation encourages students to learn as much as possible about a topic, to seek out information that no one else has noticed, to ask interesting questions, to demonstrate their abilities, to take a creative approach to the topic. In other words, it **motivates them to educate themselves**.
4. The evaluation process is **transparent**, so the students **will not mistrust the criteria or the results**.
5. The process develops students' **independence**.
6. Because it encompasses various aspects of the students' work, this type of evaluation encourages self-esteem. Every student is likely to find at least one area where he feels competent and successful. A **positive self-image** is an important factor in students' motivation to learn.
7. Students are given the opportunity to **improve their work**, based on class discussion of their problems and how those problems might be addressed.
8. Students develop **cooperation skills**.
9. Students develop **communication skills** and establish cordial relationships with their classmates.
10. Students learn how to **conduct reasoned arguments** and reach decisions based on evidence.
11. Students develop **observation skills**.
12. Students develop **a sense of responsibility**.

Evaluating group work doesn't necessarily have to involve entering letter grades in a grade-book. Teachers may prefer just to collect the relevant information in a notebook. But this information can be taken into account in calculating the semester grades. The students themselves will soon realize that they are not working just for the sake of grades; that A's are not the only reward learning has to offer.

If the workload is not balanced within a group—some students are working and others are not—the teacher can give the group a negative assessment (–) in the *cooperation* section of the chart. This mark will affect the evaluation for the group as a whole. Then the students are sure to figure out how to redistribute the work so that everyone participates.

The teacher need not be concerned if a group that includes comparatively weak students receives a good evaluation, and thus earns as high a grade as a stronger group, because:

- Group work often uncovers hidden talents of weaker students. As a result, they can become active participants in the learning process and not just passive observers.
- The weaker students truly deserve this grade, having earned it in this particular situation.
- Such a situation helps raise the self-esteem of the weaker students. Low self-esteem is a widely known problem of weak students, and contributes to their academic difficulties, decreasing their motivation to learn.

Grades for group work need not be entered in the official grade-book, but can still serve to encourage students' interest in further research. If the teacher is obligated to record some official grades, he can ask each group to decide which members have earned an A for that day's work, and to provide supporting evidence for their decision.

Let's return to those workshops where the bewildered teachers were sharing

Table 2 Individual Evaluation

Name	Initiative (sharing ideas)	Cooperation	Originality of ideas	Questions posed	Response to questions	Listening skills	Grade
Leila	+		+	+	+	+	*5*
Samir		+	+	+	++		5

their many doubts about assessing group work. To clearly demonstrate various possible approaches to their problems, I proceeded as follows. I had the workshop participants help me construct a chart of evaluation criteria—just as the students would do in a classroom situation—and in the course of the workshop I conducted an evaluation of their group work. At the same time I wrote down notes and observations concerning each individual participant, incorporating them into the chart (Table 2).

I had the workshop participants complete various group assignments, and together we evaluated their group work. Then we compared the Group Evaluation chart with the Individual Evaluation charts I had made. The participants realized that the group work assessments, which they themselves had carried out, produced essentially the same results as my individual evaluations. So I posed the question: "Now what do you think? Is it possible to evaluate group work objectively, and at the same time conduct individual assessments?"

Now their answers were more positive: "The charts are very easy to construct and use, and allow for objective evaluations." "This kind of assessment invites students to participate in the process and to share the responsibility for evaluation." "The group evaluation chart helped us realize the opportunities offered by group work." "The chart allows a teacher to realize the educational goals of this workshop."

As I see it, this assessment technique offers one way—though not by any means the only way—to enhance the effects of interactive learning. My opinion is shared by the many teachers who have successfully implemented the technique in their own classrooms.

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Bahar Kerimova is a trainer and certifier for the Reading and Writing for Critical Thinking (RWCT) program and teaches at the Scholarly-Practical Development Center, the teacher training institute at Baku State University in Azerbaijan. E-mail bkerimova@osi-az.org.

RWCT International Consortium

Representatives from over 20 countries in Eastern Europe and the CIS that participated in the *Reading and Writing for Critical Thinking* project gathered in Vilnius, Lithuania, March 13–17 to establish an International RWCT Consortium designed to continue the work begun by the project. As an initial step, participants in this informal network have developed a two-year plan for promoting critical and creative thinking, civic education, and democratic values. They intend to combine their efforts to maintain high-level international standards for the program, seek new sources of financial support and partnerships, and strengthen community ties among like-minded educators. The Consortium's website at www.ct-net.net will offer materials for school teachers, university faculty, parents, and students, with opportunities to participate in on-line conferences, learn about relevant research, and network with colleagues around the world.

Strategic Moves

Bringing All Students Into the Conversation

William G. Brozo

This installment of *Strategic Moves* is the first of a two-part series focusing on classroom strategies for increasing students' class participation. As I look in on teachers in traditional classrooms, I often find them spending valuable time trying to stifle the talking of students because it is uninvited and usually off task. Yet, we know from important research (Fielding & Pearson, 1994) that when students have ample time to discuss what they are learning, they process it more deeply and remember it better. Part I of this series describes discussion strategies designed to prompt focused classroom conversation among secondary-level learners. In Part II, in the next issue of *Thinking Classroom*, we will present additional ideas for discussions with younger students.

Recently I observed a secondary school English teacher who employed a single method of instruction: Students read orally from the assigned novel in a round-robin format and the teacher periodically asked questions, addressing them to the whole group. Within the first ten minutes it became obvious that the same few "with it" students were responding to the teacher's questions every time, while most others remained silent. In spite of the teacher's efforts to encourage follow-up comments and reactions, little or no further discussion ensued. Clearly the students knew if they remained quiet, one of their bright, talkative classmates would give the correct answer and the teacher would move on, because once a correct answer is given it can't be reused.

The main problem with this approach to class discussion is that the teacher can never be sure whether the quiet students who do not volunteer answers are just non-vocal and reserved—but are thinking critically to themselves—or are simply not paying attention. How can one know?

After observing this class, I suggested that the teacher make a very simple alteration in her instructional approach, and demonstrated what I meant by conducting a brief discussion lesson with her next group of students. When I posed a question to this group, before eliciting responses I asked the students to turn to their neighbors and talk for 60 seconds about possible answers. While the students were conversing, I moved quickly throughout the room to be sure everyone was on task and, when needed, clarified my question or helped students get started. Only when the time was up did I invite students to share with the whole class what they had discussed with their partners. In contrast with the teacher's earlier single response to her questions, I received a great deal of input from a variety of class members. Furthermore, I knew from eavesdropping on the conversations between partners that even some students who had remained silent during the whole-class discussions had definitely been paying attention—they had done some good thinking and expressed relevant ideas.

The next time I observed this same teacher, she was routinely giving her students an extra minute or so before having them respond to her questions. She was pleased with the heightened level of participation in class discussions and asked me for additional suggestions. Below are three more discussion strategies I modeled for her in classes that were reading Shakespeare's *Hamlet*. Each strategy is designed to place students in interesting situations that maximize critical thinking and bring everyone into the discussion of important questions (Green, 2002).

Inside-Outside Circles

For this strategy, we cleared some space in the middle of the room, and I organized the class into two concentric circles. Students in the inner circle faced outward, and those in the outer circle faced inward. Next, I posed a question I hoped would help the class think more personally about Hamlet's dilemma: *What would you do if someone you loved had been injured and you knew who had caused the injury?* I asked students to discuss their feelings and reactions with the person standing most directly in front of them. After a minute or so, I asked the students in the inner circle to move to the right until a new pair of students was facing each other, then start the discussion anew. After a few more rotations, I randomly called on students to share with the class what they had discussed with their various partners. Reactions ranged from seeking revenge or calling in the authorities to working out a fair

compensation settlement or mediating between the perpetrator and the victim. Regardless of point of view, the responses and counter-responses generated a great deal of valuable discussion tied to Hamlet's central conflict.

Take a Stand

For this lesson, I left a row of desks in the middle of the classroom while clearing out space on either side. I then told the class that I would make an assertion and they should move to the right of the row of desks if they agreed with the assertion, or to the left if they disagreed. I began with this statement: *"To be or not to be, that is the question" is not merely the thought of a madman but a question we all ask ourselves quietly each day*. Students considered the statement for a moment, then began to fall out on either side of the row of desks according to whether they endorsed or rejected it. Once they had taken their sides, I asked them to discuss their decision with someone on the same side. While students conversed, I moved back and forth among them, listening in. After a minute or so, I asked the students to discuss their opinions with someone from the other side of the row of desks, someone with whom they ostensibly disagreed. I periodically interrupted conversants to elicit their opinions and ideas. One student contended that Hamlet must have been mad because Shakespeare makes certain he's "put out of his misery" in the end; while another respectfully argued that life is filled with daily challenges, and it takes a genuine commitment to face them each day.

Fishbowl

This discussion strategy is aptly named because it involves one group of students looking in on another, smaller, group of students, not unlike watching fish in an aquarium. To set it up, I organized a closed circle of five desks in the middle of the room. I randomly called on five students to come and sit in the specially arranged desks. Then I had the remaining class members gather around these five, and I posed a question for the seated group: *What if Hamlet had not killed Polonius? Could he have saved himself from a certain life of tragedy? Please explain.* While the five students in the middle proposed different possible outcomes for the play and offered their rationales, the other students were asked to simply observe, to watch and listen quietly. The small group came up with a variety of responses: The Danish prince might have left his homeland forever; he could have rallied an army against the treacherous king; Hamlet's personality was so flawed that he would have met a tragic end, regardless. I then elicited reactions to the small group discussion from the students on the outside. This approach allows those students looking in on the discussion to critique and assess the ideas of the fishbowl discussants (Brozo & Simpson, 2003).

Valuing Meaningful Conversation

These three discussion strategies—inside-outside circles, take a stand, and fishbowl—work best in a classroom environment where student input is desired and respected. To create such an environment, we need to reconsider our typical role as interrogator during class discussions, a role that can cause students to retreat mentally. In order to maximize participation, we need to make time for students to reflect, converse, share, and critique in an atmosphere of mutual respect. Underlying these discussion strategies is the idea that by inviting students to explore a topic in depth, and challenging their various points of view on the topic, we can stimulate critical thinking and engender interest in and motivation for learning.

So, the next time you ask a question of your entire class, pay attention to who responds and who doesn't. Then consider inviting students to turn to their neighbor and discuss, or better yet, to get out of their seats and prepare for a new and interesting way to dialogue.

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William G. Brozo, Ph.D., is Professor of Language and Literacy in the Department of Theory and Practice in Teacher Education at the University of Tennessee, Knoxville, TN, USA. E-mail wbrozo@utk.edu.

Website Review

Meeting of Frontiers

Yekaterina Sidorova

http://international.loc.gov/intldl/mtfhtml/mfsplash.html

The website *Meeting of Frontiers* is an educational resource devoted to research concerning the movement of the Russian frontier eastward, to the Far East and the Pacific, and the American frontier westward, with the two ultimately meeting in Alaska and the northeastern Pacific. Despite differences in the historical development of Russia and America, their expansion into new territories had much in common—in terms of the freedom and opportunities the territories offered, and in terms of the conflicts and difficulties encountered by both the settlers and the indigenous populations. Both countries have a history of annexing, settling, and developing vast territories.

Meeting of Frontiers is an electronic digital library offering many different types of information on the theme in question. A large collection of references, it provides links not only to other Internet sites, but also to digital files of books, manuscripts, photos, drawings, maps, and other unique original materials. The quality and reliability of these sources are guaranteed by the international participants in the project:

- Library of Congress, Washington, DC, USA
- National Library of Russia, Saint Petersburg, Russia
- Russian State Library, Moscow, Russia
- Elmer E. Rasmuson Library, University of Alaska Fairbanks, USA
- Goettingen State and University Library, Germany
- State Archives of Novosibirsk Oblast, Novosibirsk, Russia
- Institute of History of the Siberian Branch of the Russian Academy of Sciences (II SO RAN), Novosibirsk, Russia
- Kemerovo Oblast Museum of Regional History and Folklife (KOKM), Kemerovo, Russia
- Novosibirsk State Museum of Regional History and Folklife (NGKM), Novosibirsk, Russia
- Omsk State Museum of Regional History and Folklife (OGIKM), Omsk, Russia
- Tomsk Oblast Museum of Regional History and Folklife (TOKM), Tomsk, Russia
- Tomsk State University (TGU), Tomsk, Russia
- Institute of the North (ION), Anchorage, AK, USA

The material from these various collections is integrated and organized to allow for logical navigation around the site. The exploration and settlement of the new territories is presented in six narrative sections: Exploration, Colonization, Development, Alaska, National Identity, and Mutual Perceptions. Each section contains images illustrating major events and ideas connected with its theme, as well as a bibliography of sources for further research and links to websites offering additional information. In each of the six major sections are several subsections that provide more detailed information, including additional images and explanatory text highlighting similarities and differences between the American and Russian experiences in settling new territories.

The site is bilingual—there are English and Russian versions of the text on each page. Visitors with up-to-date computers and browsers will find that the Cyrillic text automatically displays properly, but detailed hardware and software requirements are specified on the site in case of any problems. The organization of the site is clear and simple, and the quality of the images— including reproductions of rare illustrations and maps—is outstanding. Besides being well-designed and rich in information, the site is perfectly suited to a critical-thinking perspective: It presents a variety of approaches to the relevant historical issues at a particular stage in the development of the two countries.

The *Meeting of Frontiers* site could be used for history, geography, or foreign language classes (English or Russian). Materials from the site lend themselves to comparison of alternative sources, concept charts, guided discussions, etc. Teachers and students may also turn to it for individual research, and even for ideas for extracurricular activities.

Yekaterina Sidorova is the editor of a website on critical thinking (www.kmspb.narod.ru) and a teacher of information science at High School #177 in Saint Petersburg, Russia.

Pros and Cons

Required Reading?

Rastislav Dinic

Students often find the literature on their schools' compulsory reading lists slow-paced, uninteresting, perhaps even downright boring. They also have trouble connecting to the problems that are dealt with in classical works of literature. These predicaments, as well as the language used to describe them, seem far removed from the students' own contemporary lives.

Here we touch upon our question: Should a literary work, originally intended to evoke pleasure, be imposed on anyone? Is there any use in making a boy who plays Nintendo, rides a skateboard, and has no interest whatsoever in Renaissance love stories read *Romeo and Juliet*? Even supposing that he will actually read it (and not rely on the Cliffs Notes or a movie version instead), will he really be able to grasp the beauty and tragedy that Shakespeare depicts? No? Then why should he be made to read it? Reading is, in the words of the Serbian writer Milovan Danojliæ, "a noble vice, not a civic duty."

True, but not all pleasures are instantly accessible. Some of them—in fact the most worthy of them—such as love, or chess, or playing the piano, require time, preparation, and hard work. We should remember this fact before we rush out to substitute the latest volume of a popular novel for one by Mark Twain. Reading works of classical literature may be difficult at first, but in making the effort we are also learning how to read—slowly but surely mastering the carefully crafted language.

What we do after we have mastered such language is completely up to us. We can use it to enhance our reading pleasure, or we can leave it in the tool shed of the back of our minds, together with other seemingly useless tools picked up in the course of our education.

No one should be forced to use literary language, but I believe that the educational system is obliged to give each student an opportunity to master it. For this reason I believe that compulsory reading lists, in spite of all their shortcomings, should not be abolished. However, the contents of these lists should be modernized. The classic works of literature, which require time and effort, should definitely remain a part of the assigned reading curriculum, but I also think that the whole concept of compulsory reading can and should be made more "reader friendly" (or "teenage-reader friendly") by introducing modern authors into our booklists.

Consider, for example, genre literature, some of which has already been recognized as "serious." If incorporated into these compulsory lists, it could serve as a link between the world of literature and the world of movies, comics, and video games; and by bridging the gap between these two worlds, reintroduce the estranged teenage reader to the book as a medium. A similar effect would be achieved by introducing the classics of young adult literature—literature that speaks of the problems of growing up—into the teacher-assigned lists: The teenage reader would see that there is not always a dichotomy between art and life. [Editor's note: For more on this topic, see the International Reading Association list of *Young Adult Choices* published annually and available at http://www.reading.org/choices/.]

Last but not least, postmodern literature, national as well as international, could be used as a basis for a new, more engaging and more interesting approach to teaching literature, an approach different from the chronological or historical approaches that currently dominate classroom instruction in most European countries (the shortcomings of which are every day becoming more evident). Instead of leaving the young reader with the impression that literature is something dead and dry, something that belongs only in museums and on dusty bookshelves, the postmodern perspective would present literary tradition as a living and breathing thing that, through reinterpretation, still speaks to us loudly and clearly about questions of utmost importance.

Presently in Serbia, our compulsory booklists are dominated by Eastern and Middle European authors. As *Thinking Classroom* is a journal intended for an international audience, this might be a good place to begin to introduce one another to the literature of our own regions.

An invitation from the editors: We asked Mr. Dinic to introduce us to a few Serbian authors who he believes might speak to students worldwide, and he responded with the titles below. If you wish to introduce writers of special merit from your part of the world—authors with whom most readers of TC/P *are unfamiliar—write to us with your recommendations.*

Pros and Cons

1. Slobodan Selenić. (2003). *Fathers and forefathers*. (E. Elias-Bursac, Trans.). London:Harvill. (Original work *Očevi i oci* published 1985)
   Selenić is one of the most popular contemporary Serbian writers. His style is modern and quick-paced, and his plots are interesting and engaging, with an almost cinematic rhythm. Another of his novels, *Premeditated Murder* (1993), was made into a movie in 1995, directed by Gorcin Stojanovic.
2. Bora Ćosić. (1997). *My family's role in the world revolution and other prose (Writings from an unbound Europe)* (C. Bigelow and A.C. Bigelow, Trans.). Evanston, IL: Northwestern University Press. (Original work *Uloga moje porodice u svetskoj revoluciji* published 1970)
   An excellent novel narrated from the point of view of a child. The narrator often stresses unimportant, childish things and misses the important historical events going on around him. A sort of comic version of *Portrait of An Artist as A Young Man.*
3. Svetislav Basara. (1995). *Civil war within.* (R.A. Major, Trans.). Belgrade: Dereta. (Original work *De bello civili* published 1993)
   Basara is one of the most important of the Serbian postmodern authors.
4. Danilo Kiš. (1997). *The Encyclopedia of The Dead.* (M.H. Heim, Trans.). Evanston, IL: Northwestern University Press. (Original work *Enciklopedija mrtvih* published 1989)
   A collection of short stories, showing the influence of Borges and Andrić.

Rastislav Dinic is a student of philosophy and physics at the University of Nish, Serbia. E-mail vlada515@yahoo.com.

Call for Program Proposals

50th Annual Convention
International Reading Association
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San Antonio, Texas, USA

Program proposals are now being accepted for the 2005 Annual Convention of the International Reading Association, which will mark the Association's 50th birthday. In keeping with the theme "Celebrating 50 Years of Literacy Leadership," the conference will focus on preparing learners of all ages to become capable, confident readers and writers. Proposals may be submitted in any of 15 different topic categories for Institutes, Microworkshops, Symposia, Sessions, Poster Sessions, or Research Poster Sessions.

Proposals will be evaluated according to the following criteria:

- Evidence base (research, expert opinion, theory)
- Grounding in research, theory, and best practices
- Relevance and interest to convention participants
- Quality and clarity
- Cohesiveness
- Originality
- Generalizability and applicability of information
- Appropriate audience clearly specified
- Contribution to balance in the convention program

Proposals must be mailed by May 21, 2004, or submitted electronically by June 4, 2004. Further information is available at http://www.reading.org/meetings/index.html.

Writing for **Thinking Classroom**

Thinking Classroom (also published in Russian as *Peremena*) serves as an international forum of exchange among teachers, teacher educators, and others interested in democratic teaching practices. It seeks to encourage professional development, research, and reflection. Authors are invited to submit articles that focus on active inquiry, student-centered learning, alternative assessment, and other aspects of educational change. Due to the international nature of the journal, articles should address issues that appeal to a wide audience, and terms or examples that are specific to a particular country or region should be explained in the text.

Thinking Classroom strives to maintain a balance of practical and theoretical information. The writing should take the form of a narrative, rather than a formal research report. Examples from classroom experience, quotations from colleagues or students, or examples of students' work can help communicate ideas to journal readers.

In addition to original submissions, *Thinking Classroom* will consider for publication articles that have appeared previously in national journals with limited circulation, to present these works to a wider international audience.

Format for Submissions

- Submissions are accepted in English or Russian.
- Articles should not exceed 4,000 words in length.
- Articles should be submitted electronically, preferably in .rtf format as an attachment to e-mail, to **bmichaels@reading.org.**
- The full name(s) of the author(s) should be included on a cover sheet, but this information should not appear in the body of the manuscript, as submissions are reviewed anonymously. The cover sheet should also include complete author contact information (**postal address and e-mail address**).
- References to articles or books cited must be complete. For journal articles include author, date of publication, title of article, title of journal, volume number, and page numbers (where article appeared). For books include author, year of publication, title, location and name of publisher. Additional details and examples can be found online at http://owl.english.purdue.edu/handouts/research/r_apa.html
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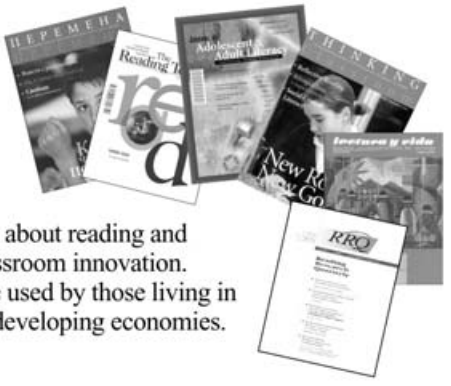

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