

Multiple Intelligences In The Classroom

**Of the seven different ways we learn, schools focus on only two.
Add the other five, and you increase the chances of success**

By Bruce Campbell

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The story of much recent innovation in education follows a familiar pattern: the theory of an innovative thinker (in this case, Harvard's Howard Gardner) gets applied by an innovative practitioner (third grade teacher Bruce Campbell), who puts the flesh of action on the bones of thinking. Along the way, theories get substantiated, the subjects of the successful experiment benefit greatly – and, as Bruce Campbell reports in this self-interview, the experimenter is forever altered.

Bruce, together with his wife Linda MacRae-Campbell and Dee Dickinson (Dee and Linda are guest editors for this issue), is currently co-authoring a book titled LearningWorks: Teaching and Learning through the Multiple Intelligences. Contact the Campbells at 19614 Soundview Drive, Stanwood, WA 98292, 206/652-9502.

If we are to achieve a richer culture, rich in contrasting values, we must recognize the whole gamut of human potentialities, and so weave a less arbitrary social fabric, one in which each diverse human gift will find a fitting place.

– Margaret Mead

In recent years, new definitions of intelligence have gained acceptance and have dramatically enhanced the appraisal of human competencies. Howard Gardner of Harvard University in his book, *Frames of Mind: The Theory of Multiple Intelligences*, suggests that there are at least seven human intelligences, two of which, *verbal/linguistic* intelligence and *logical/mathematical* intelligence, have dominated the traditional pedagogy of western societies.

The five non-traditional intelligences, *spatial, musical, kinesthetic, interpersonal* and *intrapersonal*, have generally been overlooked in education. However, if we can develop ways to teach and learn by engaging all seven intelligences, we will increase the possibilities for student success and create the opportunity to, in Margaret Mead's words, "weave a social fabric in which each diverse human gift will find a fitting place."

How can the Multiple Intelligences be implemented in the classroom?

To implement Gardner's theory in an educational setting, I organized my third grade classroom in Marysville, Washington, into seven learning centers, each dedicated to one of the seven intelligences. The students spend approximately two-thirds of each school day moving through the centers – 15 to 20 minutes at each center. Curriculum is thematic, and the centers provide seven different ways for the students to learn the subject matter.

Each day begins with a brief lecture and discussion explaining one aspect of the current theme. For example, during a unit on outer space, the morning's lecture might focus on spiral galaxies. In a unit about the arts of Africa, one lecture might describe the Adinkra textile patterns of Ghana. After the morning lecture, a timer is set and students – in groups of three or four – start work at their centers, eventually rotating through all seven.

What kinds of learning activities take place at each center?

All students learn each day's lesson in seven ways. They build models, dance, make collaborative decisions, create songs, solve deductive reasoning problems, read, write, and illustrate all in one school day. Some more specific examples of activities at each center follow:

- In the **Personal Work Center** (Intrapersonal Intelligence), students explore the present area of study through research, reflection, or individual projects.
- In the **Working Together Center** (Interpersonal Intelligence), they develop cooperative learning skills as they solve problems, answer questions, create learning games, brainstorm ideas and discuss that day's topic collaboratively.
- In the **Music Center** (Musical Intelligence), students compose and sing songs about the subject matter, make their own instruments, and learn in rhythmical ways.
- In the **Art Center** (Spatial Intelligence), they explore a subject area using diverse art media, manipulables, puzzles, charts, and pictures.

- In the **Building Center** (Kinesthetic Intelligence), they build models, dramatize events, and dance, all in ways that relate to the content of that day's subject matter.
- In the **Reading Center** (Verbal/Linguistic Intelligence), students read, write, and learn in many traditional modes. They analyze and organize information in written form.
- In the **Math & Science Center** (Logical/ Mathematical Intelligence), they work with math games, manipulatives, mathematical concepts, science experiments, deductive reasoning, and problem solving.

Following their work at the centers, a few minutes are set aside for groups and individual students to share their work from the centers. Much of the remainder of the day is spent with students working on independent projects, either individually or in small groups where they apply the diverse skills developed at the centers. The daily work at the seven centers profoundly influences their ability to make informative, entertaining, multimodal presentations of their studies. Additionally, it is common for parents to comment on how much more expressive their children have become at home.

What are some of the results of this program?

During the 1989-1990 school year, an action research project was conducted in my classroom to assess the effects of this multimodal learning format. A daily teacher's journal was kept with specific entries recording the following:

- general daily comments
- a daily evaluation of how focused or "on-task" students were
- an evaluation of the transitions between centers
- an explanation of any discipline problems
- a self-assessment – how the teacher's time was used
- tracking of three individuals, previously identified as students with behavior problems.

In addition, a Classroom Climate Survey was administered 12 times during the year, a Student Assessment Inventory of work at the seven centers was administered nine times during the year, and a Center Group Survey was administered eight times during the year.

The research data revealed the following:

1. *The students develop increased responsibility, self-direction and independence over the course of the year.* Although no attempt was made to compare this group of students with those in other third grade classes, the self-direction and motivation of these students was apparent to numerous classroom visitors. The students became skilled at developing their own projects, gathering the necessary resources and materials, and making well-planned presentations of all kinds.

2. *Discipline problems were significantly reduced.* Students previously identified as having serious behavior problems showed rapid improvement during the first six weeks of school. By mid-year, they were making important contributions to their groups. And by year's end, they had assumed positive leadership roles which had not formerly been evident.

3. *All students developed and applied new skills.* In the fall, most students described only one center as their "favorite" and as the one where they felt confident. (The distribution among the seven centers was relatively even.) By mid-year, most identified three to four favorite centers. By year's end, every student identified at least six centers which were favorites and at which they felt skilled. Moreover, they were all making multimodal presentations of independent projects including songs, skits, visuals, poems, games, surveys, puzzles, and group participation activities.

4. *Cooperative learning skills improved in all students.* Since so much of the center work was collaborative, students became highly skilled at listening, helping each other, sharing leadership in different activities, accommodating group changes, and introducing new classmates to the program. They learned not only to respect each other, but also to appreciate and call upon the unique gifts and abilities of their classmates.

5. *Academic achievement improved.* Standardized test scores were above state and national averages in all areas. Retention was high on a classroom year-end test of all areas studied during the year. Methods for recalling information were predominantly musical, visual and kinesthetic, indicating the influence of working through the different intelligences. Students who had previously been unsuccessful in school became high achievers in new areas.

In summary, it is clear that students' learning improved. Many students said they enjoyed school for the first time. And as the school year progressed, new skills emerged: some students discovered musical, artistic, literary, mathematical and other new-found capacities and abilities. Others became skilled leaders. In addition, self-confidence and motivation

increased significantly. Finally, students developed responsibility, self-reliance and independence as they took an active role in shaping their own learning experiences.

What is the teacher's role in a Multiple Intelligences program?

The teacher's role also transforms in this type of program. I developed skills different from those I would develop by standing in front of a class lecturing each day. I need to observe my students from seven new perspectives. In planning the centers, I find I am pushing my students from behind rather than pulling them from in front. Also I am working *with* them, rather than *for* them. I explore what they explore, discover what they discover, and often learn what they learn. I find my satisfaction in their enthusiasm for learning and independence, rather than in their test scores and ability to sit quietly. And most importantly, because I am planning for such a diversity of activities, I have become more creative and multimodal in my own thinking and my own learning. I can now comfortably write and sing songs. I am learning to draw and paint. I see growth and development within myself. I sometimes wonder who is changing the most, my students or myself.

Why is a Multiple Intelligences model successful?

The reasons for the academic and behavioral success of the program appear to be twofold. First, every student has an opportunity to specialize and excel in *at least* one area. Usually, however, it is three or four. In the two years since this program was initiated, I have not had one student who was unable to find an area of specialty and success. Secondly, each student learns the subject matter in a variety of different ways, thereby multiplying chances of successfully understanding and retaining that information.

Many student needs are met through this program. Their intellectual needs are met by constantly being challenged and frequently exercising their creativity. At the same time, their emotional needs are met by working closely with others. They develop diverse strengths, and they understand themselves better as individuals.

The emphasis in such a program is upon *learning* rather than teaching. The students' interests and developmental needs dictate the direction of the program. Such a model adapts to students, rather than expecting students to adapt to it. From my own classroom experiences, I believe that teaching and learning through the multiple intelligences helps solve many common school problems and optimizes the learning experience for students and teachers alike. Again following Margaret Mead, if we educate to engage the "whole

gamut of human potentialities" in the classroom, society will benefit by enabling "each diverse human gift to find its fitting place."

Four Factors In Educational Reform

by Howard Gardner

Many of us interested in efforts at educational reform have focused on the learner or student, be she a young child in preschool or an adult bent on acquiring a new skill. It is clarifying to have such a focus and, indeed, any efforts at reform are doomed to fail unless they concentrate on the properties and potentials of the individual learner. My own work on multiple intelligences has partaken of this general focus; colleagues and I have sought to foster a range of intellectual strengths in our students.

But after several years of active involvement in efforts at educational reform, I am convinced that success depends upon the active involvement of at least four factors:

Assessment * Unless one is able to assess the learning that takes place in different domains, and by different cognitive processes, even superior curricular innovations are destined to remain unutilized. In this country, assessment drives instruction. We must devise procedures and instruments which are "intelligence-fair" and which allow us to look directly at the kinds of learning in which we are interested.

Curriculum * Far too much of what is taught today is included primarily for historical reasons. Even teachers, not to mention students, often cannot explain why a certain topic needs to be covered in school. We need to reconfigure curricula so that they focus on skills, knowledge, and above all, understandings that are truly desirable in our country today. And we need to adapt those curricula as much as possible to the particular learning styles and strengths of students.

Teacher Education * While most teacher education institutions make an honest effort to produce teaching candidates of high quality, these institutions have not been at the forefront of efforts at educational improvement. Too often they are weighted down by students of indifferent quality and by excessive – and often counterproductive – requirements which surround training and certification. We need to attract stronger

individuals into teaching, improve conditions so that they will remain in teaching, and use our master teachers to help train the next generation of students and teachers.

Community Participation * In the past, Americans have been content to place most educational burdens on the schools. This is no longer a viable option. The increasing cognitive demands of schooling, the severe problems in our society today, and the need for support of students which extends well beyond the 9-3 period each day, all make it essential that other individuals and institutions contribute to the educational process. In addition to support from family members and other mentoring adults, such institutions as business, the professions, and especially museums need to be involved much more intimately in the educational process.

Too often, Americans have responded to educational needs only in times of crisis. This is an unacceptable approach. Education works effectively only when responsibility is assumed over the long run. We have made significant progress in this regard over the past decade. There is reason to be optimistic for students of the future, as dedicated individuals continue to collaborate in solving the challenging educational problems of our time.

Dr. Howard Gardner is a Professor of Education and Co-chair of Project Zero at Harvard University. He is the author of nine books, including Frames of Mind: The Theory of Multiple Intelligences (1983), and To Open Minds: Chinese Clues to the Dilemma of Contemporary Education (1989).