

## Mapping the Learner to the Technology

Exploring Multiple Intelligences and Media Selection

### Teaching Children, Not Curriculum

Teachers have expected textbook publishers and curriculum marketers to put together prepackaged instructional programs that are a combination of salesmanship, structure, and resources. While many reform movements have bemoaned a situation where the commercial tail is wagging the educational dog, teachers have grown accustomed to having a prepackaged program in place that they can borrow from and refer to as needed. It's convenient and it saves time. On the other hand, Howard Gardner's work on multiple intelligences requires us to rethink how to properly select instructional materials that reach all our learners. MI is as unique as each individual, and it requires the blend of a teacher's personal instructional style with the combination of a student's MI profile.

One of the appealing features of Gardner's theory is that it confirms so much of the work teachers already do in the classroom. Good teachers have been instinctively catering to different intelligences without even knowing about the MI model. Presenting Gardner to teachers is a pleasure because his work validates so many good things they already do. This makes for a sound marriage of theory and practice, because teachers are immediately ready to take a look at their classroom-tested lessons and units and superimpose them on the MI model. It sounds easy enough, right? But you'd be surprised how working through this process raises as many questions as it does answers!

Multiple intelligences theory serves as an impetus to challenge the status quo. Once we subscribe to Gardner's theory, we buy into the premise that we are teaching children, not curriculum. It becomes imperative that we look at the different ways we reach children. Traditional media such as the textbook are simply not enough. Today, we *teach the children*.

As we become more aware of the different modalities through which we learn, we are in need of more ways to accommodate all the different learners in our classrooms. Fifty years ago this would have been a formidable challenge. But this is the information age, and we have technology developing

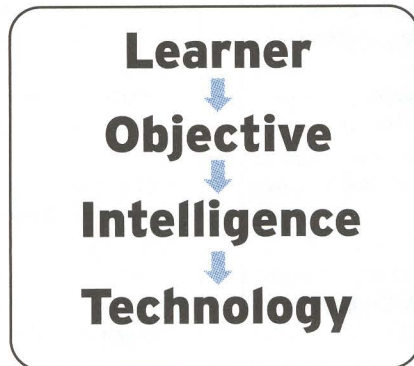
at exponential rates that helps us meet the needs of all learners. It is truly an amazing time to be in education, as the impact of brain research and technology meld together to help promote the conviction that all children can learn!

### Intelligences and Media Selection

In order to make appropriate media selection, you must first look at your learners. Are they being introduced to new material, are they practicing skills or concepts, or are they reviewing content already taught? What background material have they already covered? Are there prerequisite skills they need to master? What is their ability level with the instructional content?

Secondly, look at the learning objective. Is it appropriate for your learners? What needs to be accomplished by the end of this lesson? How have you structured activities to make this possible? How will you evaluate learner success at the end of the lesson? By answering these questions you can identify which technologies will match your identified objective. This helps you to narrow down your media choices for the lesson.

Finally, consider the intelligences. Which will you stimulate in this lesson? Are there additional intelligences from the **MI Wheel** ([surfaquarium.com/MI/mi\\_domains.htm](http://surfaquarium.com/MI/mi_domains.htm)) that would help balance your instruction? Which technologies best accommodate these intelligences? These questions will help you lock in the technology or technologies that are appropriate for your lesson. The process of matching learners to technology flows accordingly:



By considering instructional design factors in this order, you can successfully select appropriate media for any lesson. As you implement this process in your lesson planning, there has to be an obvious, natural connection between any intelligence you identify and your objective. Intelligences should reflect the goals of your lesson and flow from the actions stated in the objective of your lesson. Forced and arbitrary connections between objectives and intelligences cause a breakdown in instruction, confusing the learner. Natural connections provide a sound instructional foundation for selecting appropriate media. Of course, not every lesson will benefit from the use of technology, and knowing when it is appropriate comes with practice and experience. The goal is always to help students reach the stated objective by incorporating technologies that stimulate the intelligences.

### Technology by Intelligence

Let's take a closer look at the media that can stimulate each intelligence criteria. Always well accommodated in the classroom, the **Verbal** intelligence can be even more effectively used through modern technologies. Set aside the traditional textbook, and consider how word processing promotes not only composition but also editing and revising in ways that streamline the Writer's Workshop approach. Desktop publishing and Web-based publishing take this idea to new levels of efficacy as students can see their work celebrated within the classroom and beyond in the "virtual" world. Email is a wonderful way to promote verbal learning, as students are prompted to inquire of and respond to correspondents through written text.

The **Logical** intelligence is promoted through activities that stimulate reasoning. It can include a traditional lecture, analyzing data through a spreadsheet, conducting queries using a search engine or directory, participating in the problem-solving process of a WebQuest, and even mastering a programming language or a networked system of computers.

The **Visual** intelligence especially benefits from technology in modern education because there are so many new ways to

stimulate this path to learning. While the overhead projector, slide projector, and TV have been around for years, the use of digital slide shows is a newer way to create, manipulate, and present curriculum in the classroom. Charting and graphing have been made so much easier through all kinds of applications (word processors, draw/paint programs, spreadsheets, databases), and graphics editors allow us to manipulate any image to meet our needs. Throw in the possibilities for Web site design and construction, and the recent advances in digital animation and movies, and you can easily see why the visual intelligence is so aptly supported by technology.

The **Kinesthetic** intelligence is stimulated by physical interaction with one's environment. When used in instruction, students who manipulate materials can develop a greater understanding of skills and concepts. Diagramming on the board, sorting manipulative materials by attributes, participating in a group simulation, or using an adaptive switch in order to input responses into a computer are all examples of how the kinesthetic intelligence can be accommodated.

The **Musical** intelligence is the intelligence of patterns. It is accommodated in a variety of ways via technology. For example, using the tape recorder in a listening center

with books to follow along prompts the use of this intelligence. Incorporating digital sounds into a multimedia presentation also accommodates this path to learning. Playing online pattern games such as *Mastermind* and *Concentration* can be very musical. Even looking for visual patterns in the classroom or the schoolyard fosters musical thinking.

The **Intrapersonal** intelligence is stimulated through activities that bring feelings, values, and attitudes into play. For example, conducting a class debate on an environmental issue, following a real-time expedition through uncharted islands, participating in online surveys on an issue being studied in the classroom, completing an online form as part of a unit of study, or evaluating one's own digital portfolio full of work from a semester are all ways to nurture the intrapersonal intelligence.

The **Interpersonal** intelligence can be met through class discussion on relevant topics, collaborative projects that enrich and extend the curriculum, synchronous chat between groups of students or with experts, participation in news groups on an assigned topic, and even mailing lists that allow multiple classes to share ideas and experiences asynchronously.

Organizing and making sense of information in categories and hierarchies stimu-

lates the **Naturalist** intelligence. Creating a database to sort and search through data is a wonderful naturalist exercise. Semantic mapping is decidedly the most naturalist. Consider the use of the software application Inspiration to visually map out understandings of facts and concepts and see how it allows the learner to manipulate ideas.

The **Existential** intelligence is stimulated through learning experiences that reinforce one's sense of being and feeling part of something greater than their immediate surroundings. Online newspapers, magazines, and virtual communities help students feel like they belong to something larger than their family or classroom. Virtual art experiences and field trips help students to vicariously experience beauty in the world far beyond the classroom. Blogs and wikis allow learners to interact with one another, sharing and even modifying ideas through an open exchange of information on interactive Web sites. Even online interaction with significant people through interviews and archives can promote the use of the existential intelligence.

## Technology as a Tool

The only way to determine how technology stimulates the intelligences is to look at how technology is being used to accomplish a task. The technology itself is not a goal for instruction; it is merely a tool to help you accomplish that goal. It is in the process of instruction identified by a learning objective that we see the true nature of any technology and its relationship to the intelligences.

## Technologies by Intelligence

<b>Verbal</b>	Word processing, email, desktop publishing, Web-based publishing, keyboarding, speech recognition devices
<b>Logical</b>	Graphing calculators, spreadsheets, search engines, directories, WebQuests, problem-solving tasks, programming languages
<b>Visual</b>	Slide shows, charting and graphing tools, monitors, digital cameras/camcorders, scanners, graphics editors, HTML editors, digital animation/movies
<b>Kinesthetic</b>	Mouse, joysticks, simulations that require eye-hand coordination, assistive technologies
<b>Musical</b>	Headphones, tape players/recorders, digital sounds, online pattern games, multimedia presentations, speakers, CD-ROMs
<b>Intrapersonal</b>	Real-time projects, online surveys, online forms, digital portfolios with self-assessments
<b>Interpersonal</b>	Telephones, walkie-talkies, intercoms, online board games, collaborative projects, chats, message boards, instant messenger
<b>Naturalist</b>	Databases, file managers, semantic mapping tools
<b>Existential</b>	Virtual communities, virtual art exhibits, virtual field trips, MUDs (multi-user dimension), blogs, wikis, simulations

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