Multiple Intelligences in the Classroom, 4th Edition

by Thomas Armstrong

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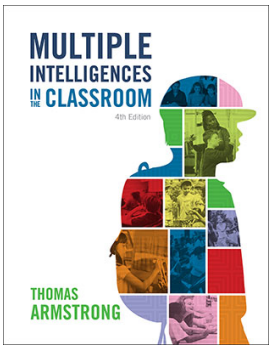

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Chapter 12. MI Theory, Personalization, and Deeper Learning

> The more people participate in the process of their own education ... the more [they] participate in the development of their selves. The more the people become themselves, the better the democracy.
>
> —*Paulo Freire*

Up to this point in the book, I have presented MI theory strategically as a way to enrich virtually any style of teaching or system of learning. In this chapter, however, I'd like to look at the emerging personalization movement and examine how MI theory can help to deepen its practice.

Let me be clear about what I mean by *personalization*. First, I am not talking about personalization in the way corporate education companies that tout "personalized" programs and products do. In essence, these programs use algorithms to collect data about students as they work through computerized course material, and then proceed to customize modules and assignments based on student inputs. There is little of the "person" in any of this (education critic Diane Ravitch calls these "de-personalization" programs on her blog at http://dianeravitch.net). Second, I'm not speaking of teacher-directed programs where instructors assess student interests, preferences, and learning styles and craft curriculum around those factors (the primary focus of this book up to this point). When I use the term personalization in this chapter, I'm referring to student-centered, student-driven projects and activities that strongly emphasize student voice and student choice.

Real personalization respects students' aspirations and feeds students' desire for mastery over real-world challenges. The reason this approach is so important to the lives of students is that it represents the best preparation they can receive for life. As Ron Berger, the chief academic officer of Expeditionary Learning (EL) Education puts it,

> In all of my years sitting in classrooms as a student, in public schools that were highly regarded, I never once produced anything that resembled authentic work or had value beyond addressing a class requirement. My time was spent on an academic treadmill of

> turning in short assignments completed individually as final drafts—worksheets, papers, math problem sets, lab reports—none of which meant much to anyone and none of which resembled the work I have done in the real world. Although I received good grades, I have no work saved from my days in school, because nothing I created was particularly original, important or beautiful. Yet when we finish school and enter the world of work, we are asked to create work of value—scientific reports, business plans, websites, books, architectural blueprints, graphic artwork, investment proposals, medical devices and software applications. This work is created over weeks or months with team consultation, collaboration and critique, and it goes through multiple revisions. The research, analysis, and production involve multiple disciplines, such as reading, writing, mathematics, science, engineering and design. (Berger, 2013)

It stands to reason, then, that the type of curriculum students should be engaged with in school reflects to a reasonable degree what they're going to be doing once they get out into the workforce. Implementing personalized learning is the best way to ensure this.

MI Theory's Contribution to Personalized Learning

Here are some ways in which MI theory can help guide the personalization process.

MI theory places Self Smart and People Smart front and center. Instead of regarding Word Smart and Number/Logic Smart as the foundation of school learning, personalized projects require, more than anything else, intrapersonal and interpersonal intelligences. In order to do the envisioning, planning, and organization required to launch personalized projects, students need to frankly assess their own strengths and weaknesses, engage in realistic goal setting, and adjust their goals as the project unfolds. Similarly, in personalized team projects, students must learn how to collaborate and participate in the give-and-take necessary to effectively implement their plans and envision the social connections needed to accomplish their goals.

Here's an example. A senior at Avalon Charter School in St. Paul, Minnesota, decided to engage in a project related to theater production. In the course of the project, he analyzed plays, took a class on stagecraft at a local university, built stage sets, and produced, directed, and acted in plays for the school community. Another senior at Avalon spent more than 800 hours working with a nonprofit educational advocacy group to help pass legislation in Minnesota expanding opportunities for individualized learning programs in the state (Traphagen & Zorich, 2013). Although both of these projects also involved the other intelligences (Logic Smart to analyze, Body Smart to dramatize, Picture Smart to visualize), the key driving power was supplied by the students' use of the personal intelligences.

MI theory helps both students and teachers envision the broad spectrum of possibilities available in developing a personalized project. A teacher who limits her understanding of learning to just words and numbers may facilitate deeply authentic personalized projects in a classroom where students choose their readings and decide on their writing genres and topics. But if this is all that is available to students, then potential gifts that they may possess in musical expression, artistic ability, dramatic sensibility, or ecological sensitivity may go untapped. When we suggest to students the possible tools available to them in developing a personalized project —words, numbers, music, audio, video, drama, nature, photos, and much more—they are more likely to be fully engaged. Figure 12.1 provides a menu of processes that students might select from in developing a project or personalized learning plan.

Figure 12.1. Processes for Personalized Learning Projects

Word Smart	Number/ Logic Smart	Picture Smart	Body Smart	Music Smart	People Smart	Self Smart	Nature Smart
Writing Reading Journaling Speaking Listening Editing Publishing Blogging Translating Proofing Storytelling Debating Recording (words) Orating Memorizing	Analyzing Collecting data Graphing Measuring Quantifying Coding Thinking critically Calculating Inventing Using heuristics Generating statistics Experimenting	Drawing Photographing Videotaping Painting Sculpting Visualizing Cartooning Sketching Animating Designing Doodling Observing Mapping Envisioning Collaging Showing (e.g., at a gallery)	Building Dramatizing Crafting Making (Maker Movement) Performing Miming Role-playing Coaching Dancing Touching Simulating Mimicking Sculpting Creating mock-ups	Composing Performing Creating musical instruments Listening to music Conducting Analyzing music Singing Synthesizing Recording Broadcasting Rapping Chanting	Mentoring Interning Apprenticing Job shadowing Volunteering Interviewing Marketing Persuading Mediating Counseling Consulting Leading Group organizing Discussing Collaborating Sharing	Reflecting Choosing Organizing Goal-setting Envisioning Self-evaluating Planning Meditating Dreaming Self-monitoring Self-regulating Getting in touch with one's deepest feelings	Classifying nature Collecting nature Observing nature Preserving nature Gardening Farming Ranching Raising or caring for animals Conserving Advocating

MI theory can help teachers integrate personalized student-driven activities and projects into the traditional curriculum. Many teachers are hesitant to wade into the deep waters of authentic student-centered projects because they fear losing contact with the standards, requirements, and content that form the core of their teaching responsibilities. Kallick and Zmuda (2017) view personalized learning as a continuum, teacher-directed at one end and student-driven at the other. Furthermore, they apply this continuum to several components of the personalized learning process, including goal setting, idea generation, tasks, and evaluation. Students may lead the way in some of these areas, while the teacher takes responsibility for the others. Certainly, many teachers will want to test the waters before they engage in a full-fledged student-directed program. Figure 12.2 suggests how activities in traditional content areas might be designed to begin the process of personalizing work in each of the eight intelligences.

Figure 12.2. Personalized Learning and MI Theory

Personalized Learning MI Integration	My Community (1st Grade Social Studies)	Geology (4th Grade Science)	Expressive Arts (8th Grade Art)	The Novel (11th Grade English-Language Arts)
Word Smart	Make a book about your favorite things in the community	Read self-chosen books and articles on geology; keep a "geologist's journal" of your explorations	Create art from words and letters in English and other languages spoken by you or your family	Read self-chosen novels

Number/Logic Smart	Choose things to count in your community (e.g., houses on your block, street lamps downtown)	Become familiar with field guide tools and strategies used to analyze rocks; study the molecular structure/elemental composition of rocks	Create art from mathematical representation of personal data (e.g., scatter plot art based on the times you went to bed each night plotted against your test score results the following day)	Create databases to keep track of books read and films watched (with a data field for personal reactions and interpretations)
Picture Smart	Take photos of your town and put them together in a photography exhibit	Put together a photo display of local rocks (for use to help others in their identification)	Put together a "mood collage" representing your feelings during a typical day	Watch films based on novels read
Body Smart	Go on field trips to different areas of your community and create "social stories" of the trips	Learn appropriate techniques for breaking rocks for analysis	Create a self-portrait sculpture	Put on a play, mime show, or improvisation based on scenes from novels read
Music Smart	Make an audio recordings of the sounds heard	Write a song based on your favorite rock or rocks ("rock music")	Use composition software to create an instrumental work	Create a musical composition that tells the most interesting

	around your community		representing your opinion about some controversial topic	stories from each novels
People Smart	Contact a local historian who can visit the school and talk about the history of your community; interview members of the community about the history of your town	Establish a "rock hound" club; meet with a geologist; share rock collection with a lower grade	Get together with a small group of peers to create a drama that acts out a topic of keen interest to participants	Create a book study group; e-mail or Skype with authors
Self Smart	Make a list of all the things you like most about your community and all the things you like least about it	Put together a rock display of your favorite found specimens	Choose an art form and a topic of special passion and create the work	Choose the novels you wish to read; work at your own pace; decide how to present each book to others
Nature Smart	Create a garden to produce food to give to the neediest people in	Study the geology of the local area where you live	Create a work of art expressing your personal philosophy using only	Create a bibliography of novels where nature is one of the key "characters"

	your community		natural materials	

MI theory provides a way to contextualize the learning that unfolds during student-directed projects. Understanding that truly personalized learning reflects the fact that students may change direction as they develop their projects, MI theory provides a conceptual map that can help both teachers and students understand which intelligences are being activated and how they can be further extended into the learning process.

An excellent model being used to personalize learning is the Genius Hour, which emerged from Google's injunction to employees that 20 percent of their work time should be spent on creating their own unique ideas for helping the organization. In Genius Hour classrooms across the United States, teachers have set aside a specific amount of time per day or week for students to engage in passion projects that reflect their own deepest interests. For example, Spencer (2017) writes about a student who focused on studying the history of skateboarding and ultimately designed a model of a hybrid skateboarding museum and skate park. This project integrated the Word Smart, Body Smart, Picture Smart, and Number/Logic Smart intelligences into a Self Smart–directed project. Another student curated (Self Smart) her favorite recipes from around the world (Word Smart, Body Smart) and integrated them with interviews she conducted with immigrants (People Smart). A group of students collaborated (People Smart) on rating (Number/Logic Smart) existing roller coasters and eventually designed (Body Smart, Picture Smart) their own model ride.

Yes, But How Deep Is the Learning?

Naturally, a big concern of teachers relates to how much learning is actually going on during these student-driven projects. Some teachers have aligned personalized learning exercises directly to state or district standards or developed benchmarks to assess student learning progress. Whether a teacher decides to do this or not, it can be helpful to have some measure of the *level* of learning going on at any given stage of the personalized learning process. Webb's (1997) Depth of Knowledge (DOK) schema provides a template to help educators gauge how deep a student project may go in terms of cognitive complexity for any given learning activity. It consists of the following four levels (Hess, 2013):

1. **Recall and Reproduction**—includes listing, defining, calculating, memorizing, reporting, and identifying;
2. **Skills and Concepts**—includes inferring, categorizing, predicting, interpreting, summarizing, and predicting;
3. **Strategic Thinking and Reasoning**—includes critiquing, appraising, investigating, testing, hypothesizing, assessing, and revising; and
4. **Extended Thinking**—includes initiating, designing, collaborating, researching, synthesizing, self-monitoring, critiquing, producing, and presenting.

It's important to keep in mind that we're not talking here about "good, better, or best" learning or thinking. Each of these levels has significance in its own right. For example, a student's plan during a Genius Hour to learn Mandarin Chinese may exist at Level 1 of Webb's model, but would

be more intellectually challenging than another student's Level 4 project to research the background and significance of songs popular during World War I.

Webb's model allows teachers to monitor levels of thinking processes and use that information to help students self-evaluate and improve their learning plans. In the course of developing a robotics project, for example, a student may realize he needs to master a Level 1 skill in coding as a prerequisite for programming the robot for a Level 4 navigation routine. The fact that students can themselves learn to self-monitor the cognitive complexity of their work (and, in addition, understand their multiple intelligences) represents an important metacognitive skill that can carry over into everyday life. Figure 12.3 provides examples of how MI theory can be understood in relation to Webb's DOK model.

Figure 12.3. Examples of Webb's Depth of Knowledge Model Integrated with MI Theory

Intelligences	DOK-1 – Recall and Reproduction *What is the knowledge?*	DOK-2 – Basic Application of Skills and Concepts *How can the knowledge be used?*	DOK-3 – Strategic Thinking *Why can the knowledge be used?*	DOK-4 – Extended Thinking *How else can the knowledge be used?*
Word Smart	Learn the correct orthographic spelling of English words	Write a poem, short story, or novel	Analyze an author's writing style to help improve one's own writing abilities	Create a weekly radio show based on research done during the previous week
Number/Logic Smart	Memorize algorithms to use in doing math problems	Use heuristic strategies in solving math problems	Design a science experiment to measure the amount of sugar in various fast food beverages	Set up a school weather station and monitor data over a period of several weeks or months
Picture Smart	Learn about and reproduce graphic	Use knowledge of graphic software to create a website	Use a graphic arts app to create an architectural	Curate a visual art show made up of contributions from the school

	images for an artwork		design that integrates two architectural styles	and local community
Body Smart	Master a motoric routine for a gymnastics class	Execute winning backhand volleys while playing a game of tennis	Choreograph a dance	Develop a football game playbook that can be used by the school's varsity team
Music Smart	Learn how to read musical notation for the piano	Play a violin sonata by Mozart	Compose a piece of music for the electronic synthesizer	Organize a concert where you will perform or conduct your composition and give a lecture afterward on its creation
People Smart	Remember and reproduce proper social behaviors in the classroom	Lead a small-group discussion using acquired interpersonal strategies that maximize collaboration	Create, provide, and evaluate a survey that polls student opinion on the topic of school bullying	Plan, create, and lead a student voice campaign in school
Self Smart	Recall and be able to express past memories of failures and successes in school	Write or create in nonverbal media an autobiographical account of your life	Create and lead an activity to teach 1st grade students about their multiple intelligences	Develop a yearlong project to plan and direct your independent learning in school based on Joseph Campbell's hero's journey

Nature Smart	Memorize the taxonomy of living things created by Linneaus	Use Linneaus's taxonomy to classify arthropods in the field	Design an experiment to evaluate the quality of the local drinking water	Plan and lead a coordinated school–community campaign to test and monitor the water pollution in the local community

Ultimately, authentic personalized learning should be regarded as a delicate balance between a student's own motivations, interests, and aspirations and the teacher's knowledge of the terrain that can be covered in a learning adventure. The student provides the passion, the background, and the forward motion in exploring an area of great interest, while the teacher brings to the table her own skill set of strategies, resources, suggestions, and feedback. A knowledge of MI theory provides a cognitive map that can help lead a student's personalized learning journey toward a successful and meaningful conclusion.

For Further Study

1. Set aside a specific amount of time each day or week for a Genius Hour when students can explore a topic, issue, or pursuit of great interest to them (for more information on setting up a program, go to www.geniushour.com). As students choose their projects, notice whether there is a match or mismatch between a student's most developed intelligences and the intelligences required to do the project or the intelligences that will be strengthened as a result of the project. Talk with colleagues who are implementing the Genius Hour about the pros and cons of students choosing projects based on their desire to improve a difficult intelligence, their wish to continue developing a preferred intelligence, or the impetus to explore an intelligence they may only be dimly aware of possessing.
2. Evaluate the level at which your current classroom teaching integrates authentic personalized instruction (not computer-based or teacher-enforced). Consider how you might bring more student-driven personalization into your program and how you could integrate the theory of multiple intelligences into the projects or pursuits that students choose to explore.
3. Develop a student-directed personalized program, or take curricula you've already developed and use Webb's DOK schema and MI theory to keep track of which intelligences are being used and what levels of learning are being engaged. List additional activities that might enhance the intellectual breadth and cognitive depth of the program.

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