

# WHITE PAPER

**Are IT trainers aware of the effect of multiple intelligences (MI) and different learning styles on training participant performance?**

## **ITrain Opinion**

*IT trainers aren't generally aware of the individual learning needs of classroom participants. Trainers will improve participants' transfer and application of new skills by addressing their multiple intelligences and offering exercises that allow participants multiple opportunities to practice technical subjects.*



**ITrain**  
**International Association of**  
**Information Technology Trainers**

White Paper: Are IT trainers aware of the effect of multiple intelligences (MI) and different learning styles on training participant performance?

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ITrain - International Association of Information Technology Trainers  
6030-M Marshalee Dr. PMB 616  
Elkridge, MD 21075-5987  
410.567.5366 or 888.290.6200  
801.650.0423(fax)  
itrain.org member@itrain.org

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*ITrain presents Train the Trainer seminars on a regular schedule in Columbia, Maryland USA, near our headquarters.*

*These seminars, including those leading to professional certification, are available at sites worldwide for special groups and organizations. Call 1.888.290.6200 to discuss holding seminars at your office.*

*The copy and paste commands have multiple execution options (i.e. [Ctrl+C], [Edit / Copy], or the toolbar icon).*

*Whichever alternative(s) were taught may be substituted in steps #2 & 4, respectfully.*

## Introduction

During a recent Train the Trainer seminar, the seminar participants began a discussion exploring why some IT training participants were able to easily grasp what were, in our judgment, simple instructions and were then able to apply the conceptualized instructions to new situations.

Compared to this fully-able group, some participants were also able to demonstrate comprehension of the concept and successfully apply it in situations that were similar to the teaching example. This second section of participants was not able to apply the concept to new situations that were different in form to the teaching example.

A third segment of participants had difficulty demonstrating an understanding of the concepts and were challenged when attempting to apply it to both exercises that were similar to and dissimilar to the teaching example.

## Discussion Example: Spreadsheet Copy

The specific example used during our conversation was the 4-step copy process common to most spreadsheets, specifically Microsoft Excel.

The 4-step process is:

- 1. select the cell(s) to be copied**
- 2. execute the copy command**
- 3. select the destination cell(s)**
- 4. execute the paste command**

The conversation began with the question “Why can some students grasp the Excel copy concept quickly and apply it to new situations while other students, who complete the instructor-led exercises perfectly well, are unable to apply the copy command to new worksheets, instead relying on manually entering data?”

The implication is that a correctly applied copy command would save time and/or reduce typographic errors and the class participants were instead manually typing in numbers and formulae.

This is a question that has come up in multiple conversations with trainers, and often the spreadsheet and word processor mail merge operations are cited as common concepts that consign class participants into one of the three groups.

## Seven Human Intelligences

One Train the Trainer participant recalled hearing of a pedagogical theory that learners have seven intelligences. This view is proposed by Howard Gardner in a number of his books written in the latter part of the 20th century.

Gardner's seven intelligences are:

1. **language**
2. **logical-mathematical analysis**
3. **spatial representations**
4. **musical thinking**
5. **bodily-kinesthetic problem solving**
6. **understanding of other individuals**
7. **self-understanding**

*Gardner says all individuals exhibit varying levels of competence in each of the seven areas of intelligence.*

All people have skills in each of these seven areas, thereby describing human thought as being composed of multiple intelligences (MI). Although people each have abilities in all areas, noticeable preferences or strengths are usually evident. Correspondingly, most people display weaknesses or less-defined abilities in one or more areas.

While it's not within ITrain's current expertise to express an understanding of Gardner's work, a basic awareness and familiarity with different learning styles is, in our opinion, a prerequisite for all competent IT trainers, including those associated with ITrain. Trainers should be aware of different comprehension and learning theories with the intention of using this knowledge to make themselves more self-aware and ultimately increase their training abilities.

*Train the Trainer participants received copies of Gardner's books with the agreement that they would be rotated amongst the participants.*

When Gardner's theories were introduced during the Train the Trainer seminar the conversation was hampered because none of the participants was familiar with the MI concept other than one participant's having been briefly exposed to it prior to the seminar. Before the end of the seminar, a number of Gardner's books were purchased: a different one for each participant.

The participants are sharing the texts amongst themselves and have setup a rotation of self-tutorials. The result of this rotation will be reported in a future publication.

One of Gardner's principal tenets is educational systems should serve the learning needs of the students rather than requiring the students' to give up their preferred learning behaviors to succeed in school.

Quoting Gardner: "Such well-documented differences among individuals complicate and examination of human learning and understanding. To begin with, these differences challenge an educational [training] system that assumes that everyone can learn the same materials in the same way and that a uniform, universal measure suffices to test student learning. Indeed, as currently constituted, our educational system is heavily biased toward linguistic modes of instruction and assessment and, to a somewhat lesser degree, toward logical-quantitative modes as well." [Gardner, *The Unschooled Mind*, 1991, ISBN 0-465-08896-1, p. 12]

*Rigid training systems don't attend to the specific learning needs of all participants.*

If we model our training systems (pedagogy) on the systems that many of us experienced in our prior education, our students will be handicapped because, like some of our teachers and school systems, we trainers may create a rigid learning system that asks the our training participants to mold themselves to the requirements of the system rather than creating a flexible learning environment that accommodates multiple learning preferences and molds itself to the needs of the participants.

## Training vs. Education

We insert the word "training" following "educational" in Gardner's excerpt because although training is related to the learning of specific skills, kinesthetic skills, and education is generally used in reference to broadening, general learning, it's important to recognize that almost all learning theory has been conceived by educators and trainers are, without an alternative, applying the best practices of our educational systems in our training classes. While we're not educators per se, we're using educational practices in our training sessions.

*ITrain's certified software learning guides each contain an average of 80 screen capture images.*

*Two manufacturers that include these poster-size installation diagrams are Dell and Gateway.*

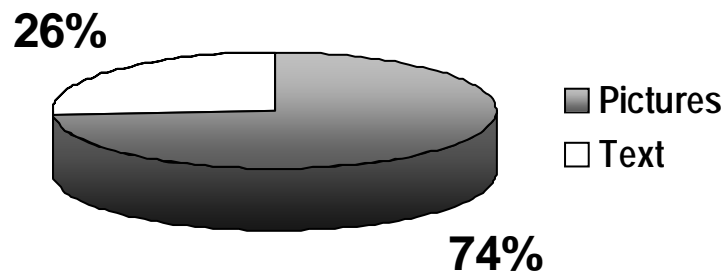
*IT professionals worldwide, prefer picture-rich training guides: 74%, in a multi-year survey. Just a quarter of IT professionals prefer a text-filled learning guide.*

*This same audience annually attends 88 hours of training.*

A good example of this is the common difference between an academic (educational) text book and a skills training guide, such as ITrain's certified software learning guides. The text book is usually filled with page after page of densely-packed words, separated occasionally with graphic figures or pictures. While a well-written software training guide makes ample use of screen capture images to provide points of reference for participants.

Much like an instruction guide for installing a new computer. The manufacturers who have focused on providing a high level of customer service (and not unintentionally reducing their technical support overhead), are including well-imaged posters with each new computer that graphically demonstrates how to connect the required cables and plugs.

IT professionals report a strong preference for picture-rich learning guides.



## Poster, Manual, or Manual Testing

Picture, text, or kinesthetic examination. Why is it that some individuals find the picture poster a blessing, while others prefer to read the entire owners manual before beginning. Still there are others who prefer to unbox the computer and look at all the connectors to determine their proper use.

All are valid evaluation styles, but they are significantly different, and when these owners of new computers attend training, they will garner the most benefit from a trainer who understands that a multi-disciplinary training program is most likely to reach all of the participants because it involves multiple learning portals.

*In goal-oriented training, such as project management and network administration, participants respond well to small-team competitions. Offer T-shirts or a free lunch to the team that determines the shortest critical path or creates the most streamlined network plan.*

## Implementing MI-Aware Training

When creating training programs, involve as many of the MI attributes as possible. Add lots of pictures and diagrams to your training guides. Make ample use of the white board or flip chart. Use an overhead projector to display transparency slides or the screen output of the demonstration computer.

Get the participants doing physical activity as soon as possible. Begin by orally introducing the main topic, and then give the class a tangible exercise within five minutes. Bang, right away, get 'em working on a realistic exercise.

Involve the students in group projects. If appropriate, add a bit of competition: one side of the room against the other, for example. Offer a simple prize for the team that has all members accurately completing the exercise first. However, don't emphasize raw performance speed over learning and accuracy. Use your judgment.

## Resources for Continued Learning

Where do you go from here?

We urge you to attend ITrain's Train the Trainer Boot Camp and Advanced Seminar & Conference. These two seminars are regularly scheduled in Columbia, Maryland and at convenient training sites worldwide.

The Advanced Seminar & Conference is a prerequisite to Professional Technical Trainer (PTT) certification, the IT training industry's professionalization program. Details posted on the [itrain.org](http://itrain.org) site.

You may also find Howard Gardner's books valuable. They are in print and are available at local booksellers in the U.S. They're also available through the major online booksellers.

If you're not yet a member of ITrain, it's time to join. The thousands of trainers who are members of ITrain, their professional association, find the benefits of ITrain membership the source of much of their professional success. Membership is open to trainers and training providers of all disciplines. Trainers may be in private practice, em-

ployed by a training center, or employed as a trainer or training manager within a non-training organization.

Members are invited to review special documents, such as this white paper, on the association's website. Daily, weekly, and monthly newsletters are published for the benefit of the global IT training community, and members are invited to share in all of the information gathered and disseminated by their association.

For membership information, visit our website: [itrain.org](http://itrain.org) or contact Dave Murphy, membership director, at 1.888.290.6200 or [member@itrain.org](mailto:member@itrain.org).