

## Teaching for the Success of All Learning Styles: Five Principles for Promoting Greater Teacher Effectiveness and Higher Student Achievement for All Students.

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### Introduction

One of the biggest challenges teachers face is to find ways to succeed with all of their students, not just those with whom they have a natural affinity. Too often we accept the idea that we simply cannot reach all students, and to approach some students as unsolvable puzzles--less able or less inclined. Even the most talented and well-trained teacher can find many students difficult to work with. Often these problems are rooted in substantive emotional and/or behavior issues, but more often our difficulty understanding or promoting the success of particular students is a result of fundamental incongruities in cognitive preferences and learning styles.

Research into teacher and student differences suggests that when teachers do nothing other than what they are prone to do, similar-type students are more successful in their classes, enjoy the experience more, and are viewed more favorably by the teacher. Conversely, students who are less similar to the teacher by type are less successful, report liking the teacher and the class less, and even receive lower grades on average. However, when teachers take steps to understand and mitigate issues related to incongruence, these effects are minimized.<sup>1</sup>

### What is the solution?

Given that any class of students is diverse in their learning styles and cognitive orientations, it is important to find solutions to benefit the teacher and all of his or her students. Presented with this reality, some teachers respond with denial and/or indifference. They choose to ignore the issue and approach all students from their uniformly narrow set of attitudes and practices. Without a great deal of luck, this approach is usually a lose-lose proposition in the end--unhappy students and a frustrated teacher. Many teachers, upon becoming aware of the reality of the incongruence of their teaching style and their students' learning styles, set out to change their personalities to adapt to the styles of their students. This is a well-intended solution, but in the end it is overly taxing and unhealthy for the teacher, and a lose-win solution. Still other teachers, having learned of their students' learning styles, set out to design an individualized program of instruction for each student. Again this is a noble effort, but the cost in time and effort makes this impractical for teachers with even modest class sizes. A growing number of teachers are adopting an approach incorporating "multiple intelligence (MI) theory."<sup>2</sup> The results are usually improved teaching performance and a classroom that meets the needs of

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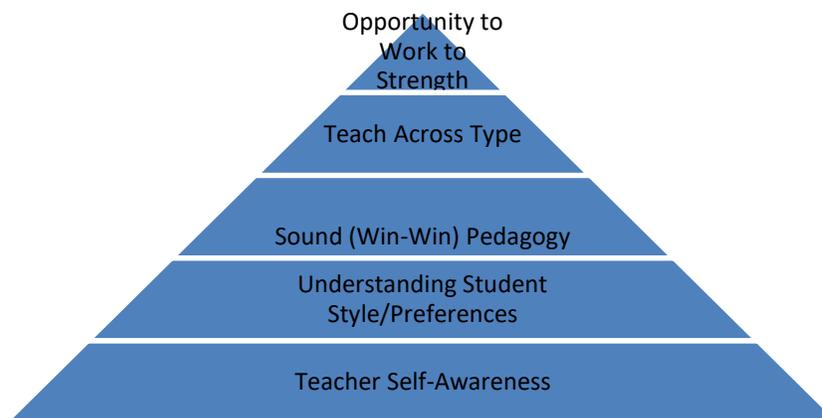
<sup>1</sup> Cooper, S. & Miller, J. (1991) MBTI learning style – teaching style incongruities. *Educational and Psychological Measurement*, 51, 699-706.

<sup>2</sup> Howard Gardener's "Multiple Intelligence" theory suggests that there are a number of types of intelligence rather than those traditionally considered in the measurement of IQ. Gardener does not suggest that these intelligences are measurable, testable, or the same as learning styles or types.

more learners. However, MI theory is limited in that it is not particularly useful in diagnosing student needs, helping make sense of differences, or providing insight or direction for those attempting to build relationships with those of incongruent types.

To achieve an approach to teacher-student incongruence that could truly be considered win-win, it must be systemic but practical, and be an asset to the teacher at the same time it promotes student growth and achievement. Ideally, diversity would be approached as a benefit, rather than a liability. Moreover, a truly successful approach would allow the members of the classroom community to be themselves, succeed to their potential and value the gifts of the other members of the community.

Five ingredients seem to be critical to create a win-win approach to difference. First, the teacher must have an awareness of who they themselves are, what they value and their natural “default preferences.” Second, the approach must provide the teacher a systematic means to understanding the learning needs and cognitive style preferences of each of the students in the class, as well as helping the students function collectively and appreciate one another’s gifts. Third, the teacher must have well-established pedagogical tools that are effective across learning styles. Fourth, the approach must provide the teacher an understanding of both sides of each learning dimension and offer strategies to meet the needs of students who work out of opposing preferences. Finally, the system should illuminate the conditions in which different types of students work best so that the teacher can create opportunities for each student to work to his/her particular strength. These ingredients could be considered to be hierarchical in nature, each element building upon the last, as depicted in Figure 1.



**Figure 1: Five Principles for Succeeding with Student Learning Style Diversity**

### **Principle 1: Know Yourself and Your Teaching Style/Type Tendencies**

On first inspection, it may seem to be of little value to undertake self-examination of our values related to teaching. Most of us believe that we know ourselves pretty well, and that what we most desire are better ideas or more resources. However, the greatest hurdles teachers face when attempting to understand why some of our students are not comfortable, not learning, or not on their side, in most cases are related to our limiting assumptions. Too often, we do not have a sufficiently broad perspective to make sense of each of our student’s needs, and as a result, we see those needs homogenously and miss out on their diversity.

A good place to start in self-examination is to look back at your own experience of school. How did you learn best in school? How did you form your definition of effective teaching? Often we view what is “best” through the lens of what was “best for us,” or what we were used to. It can be very instructive to survey the school experiences of other adults here, and note the differences among the stories.

It may be useful in the process of self-reflection to take a learning styles inventory, and become familiar with the dimensions underlying the instrument, and one’s preferences on each dimension. Most of us have some intuitive sense of how people vary, but using a formal research-based model such as the four-dimension structure formalized by Carl Jung and used in the Myers-Briggs Type Indicator<sup>3</sup> provides both validity and clarity to our efforts. The Paragon Learning Style Inventory (PLSI) adult version, the MBTI, and the Keirsey-Bates Temperament Sorter are all reliable adult reading level inventories that are based on the Jungian dimensions (e.g., Introversion/Extroversion, Sensate/Intuition, Thinking/Feeling, Judging/Perceiving).

As you become more familiar with the four dimensions and your preferences for each, you will begin to see how your preferences manifest themselves in your teaching values and behavior. You may better appreciate why you have been naturally drawn to certain types of students and particular teaching methods. Examining your teaching within each cognitive/learning dimension may reveal that what you are doing is working much better for some students than others. For example, if you are an extrovert (E) you may assume that all students are budding extroverts that just need a bit of encouragement. If you are an introvert (I) you may value quiet and control more as a result of personal comfort than from any evidence that it is good for students. Moreover, if you are a more practical minded sensate (S), you may have a heightened value for accuracy in work and for students that stay on task, whereas the intuitive (N) teacher may have a greater appreciation for creative thought. In contrast, if you are a more abstract minded intuitive teacher you may pay less attention to the practical needs of your student, something that the sensate teacher is likely to do more naturally.

Reflect on the criteria that you’ve used to determine who you would consider the best teachers that you’ve had as a student. What did you appreciate about them? Did all the students value them as much as you did? Consider your “type lenses.” If you are a feeler (F), it is likely that some of your favorite teachers were inspiring in some way. Whereas, if you are a Thinker (T) it is likely that some of your favorite teachers were those that you viewed as knowledgeable and challenging. Consider that most classes are comprised of about half Fs and half Ts.

It may be instructive to ask a few other people about their best and worst learning experiences. You may gain an insight into your students’ desires and needs. Often an area that causes a great deal of frustration between teacher and student is the fourth dimension related to Judging (J) and Perceiving (P)<sup>4</sup>. For example, for J types, some of your most frustrating experiences likely involved P teachers who you felt were too open-ended and random. For Ps, some of your most troublesome experiences may have involved teachers who let their J “default tendencies” create an overly restrictive environment for you. Consider that your students are about half and half across this dimension. Do your values provide an environment of equal opportunity to students

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<sup>3</sup> Myers-Briggs Type Indicator, Consulting Psychologists Press, Palo Alto CA.

<sup>4</sup> The dimension of Judging and Perceiving is (maybe more descriptively) also termed Sequential and Random by Gregorc, A. (1985). *Inside Styles Beyond the Basics*, Columbia, CT: Gregorc Associates.

of each type, or are there times when your “default preferences” are experienced as problematic to the dissimilar half of the class?

Excavating the roots of our values is useful in locating places where we needlessly limit our success. But the reality is that in the end, “we teach who we are.” So we need to be able to be authentic and feel ourselves throughout the day. So how does one create a win-win classroom and at the same time be true to who one is? To begin with, it might be instructive in this process to make a few distinctions within what could be referred to as one’s “style.”

Examining your teaching style closely, you might discover distinctions among these three areas:

- values you possess that have been conditioned or learned
- values that could be considered your cognitive “default preferences”
- your teaching choices and actions

To explore the first area, begin by creating two lists. The first list might be titled something such as: “Some of my habits that I really like.” Make this list extensive. Then examine the items. Where did you learn to do these things and/or what did you do to develop these behaviors? The second list might be titled: “Some of my habits that I don’t really like.” These are things such as passive-aggressiveness, biases, hostility, laziness, perfectionism, worry, stress, and/or any neuroses we have. These tendencies have little if anything to do with your cognitive preference. Take a look at this list and recognize that these behaviors are a result of conditioning, and can be unconditioned. As Eckhart Tolle<sup>5</sup> would say, “they are not you.” They may require a lifetime of awareness to change, but they are not “you.”

As you become more familiar with the various cognitive dimensions that exist in the human population and your preferences in those dimensions, you will develop a clearer sense of what could be considered your “hardwired preferences” and what could be considered “learned behavior.” For example, one could unlearn a tendency to be worried all the time, but most experts agree that one could not unlearn an extroverted cognitive orientation. One’s conditioned values and behaviors need to be viewed distinctly from one’s natural preferences. Sandra Hirsh and Jane Kise, in *Soul Types*<sup>6</sup>, suggest that the most productive path to self-realization is to first become grounded in an understanding of one’s true type, and then to gradually develop greater comfort in working in one’s inferior functions<sup>7</sup> over time. Therefore, as teachers our first step would be to make peace with our organic cognitive preferences, and recognize them as separate from those learned behaviors that we seek to be growing more of or growing out of.

Finally, we need to examine our teaching practices, and recognize that they are for the most part a result of choice. Each choice or action we make assumes countless alternative actions that were not chosen. Over time these choices become habits, and eventually develop into a teaching style. Most of us, after examining the four cognitive type dimensions, will immediately see our preferences manifested in our teaching style. Research confirms that the majority of

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<sup>5</sup> Tolle, Eckhart. (1997) *The Power of Now*. New World Library: Novato, CA.

<sup>6</sup> Sandra Krebs Hirsh and Jane A. Kise. (1998) *Soul Types*. Hyperion: New York.

<sup>7</sup> An inferior function is the opposite side of a dimension from one’s preference or dominant side. For example the inferior function of a thinker would be a feeler.

teachers teach in a style predictably consistent with others of their type<sup>8</sup>. If someone had access to your lists of habits and knowledge of your cognitive preferences, could they predict what you do as a teacher? For most teachers they could, which makes the teaching choices of most teachers very predictable<sup>9</sup>. Do you want to be that predictable?

The next four sections will provide some assistance in helping you make your teaching behavior more conscious and deliberate. These next principles should provide a practical guide to helping you choose teaching behavior that is grounded in your conscious assessment of what is best for you and your students, and less a result of unconscious habits and default tendencies.

**Principle 2: Gain an understanding of each of your students' learning styles and needs, and promote a community of learners respectful of one another's strengths and differences.**

As you become more familiar with the four dimensions of cognitive preference, you will find a greater ability to recognize those preferences in your students. It is not critical to formally survey your students, but often giving an inventory can be enlightening to both teacher and student. For the teacher, the results of an inventory can provide a degree of certainty that an educated estimate cannot. For the student, the inventory offers an introduction to the idea of organic learning style differences, and provides a concrete method for initiating the process of personal type awareness. For many students there is a great liberation to understanding features that make them unique, and for some, why they consistently think and process differently from other students. The Paragon Learning Style Inventory (PLSI) *student version* and the Murphy-Meisgeir Type Indicator (MMTI)<sup>10</sup> were both developed for young people, ages eight and up.

It can be helpful to have a profile of one's whole class as well as each individual learning style. Having information related to trends in the class is helpful in understanding why certain classes are different from others. For example, a class full of extroverts can feel more active to the teacher, yet knowing that the class will just tend toward being more verbally expressive can help the teacher attribute the behavior to a collective cognitive tendency rather than misinterpreting it as something else. Recognizing when a class has a general tendency toward one of our opposing dimensions can help us stay mindful of the potential for ongoing teaching challenges as well as helping us not to perceive incongruities as personal failures.

As we better understand type theory and apply it to our work with students, we should be cautious of potential pitfalls. Knowing a student's type is not a substitute for getting to know the entire student. Be careful that you use type to assist you in gaining a deeper, more

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<sup>8</sup> Myers-Briggs, I., McCaulley, M., Quenk, N. and Hammer, A., (1998) MBTI Manual 3<sup>rd</sup> Ed. Consulting Psychologists Press: Palo Alto, CA.

<sup>9</sup> DeNovellis and Lawrence (1983) reported observation of 76 volunteer elementary and middle school teachers in the classroom. Results showed small but significant differences in directions consistent with theory: IS teachers were more likely to be rated as controlling the choice of activities; NFs were rated as moving more freely about the class room; SF's were seen to attend to pupils closely, to be attending to several pupils at the same time, and to have pupils central in the activities. F teachers were also rated as giving more positive verbal and nonverbal feedback to students. NFPs were rated as showing more nonverbal disapproval. The authors commented that Ns allowed more individual activity in the classroom and attempted to control the resulting disorder with nonverbal negative behavior. Summary available in PLSI materials and MBTI manual 2<sup>nd</sup> Edition.

<sup>10</sup> Murphy Meisgeier Type Indicator, Available from Consulting Psychologists Press: Palo Alto, CA.

meaningful understanding of your students and not as a tool for stereotyping. Moreover, never use type as an excuse for limiting a student's potential or ability. Furthermore, do not allow students to use type as an excuse for avoiding certain experiences or for a lack of effort. The teacher attitude that is most predictive of student success is that of high expectations. Understanding type should never lower expectations, but should help provide additional and more effective pathways to student achievement.

Creating a community of respect begins with the teacher as role model. A teacher who shows a conspicuous value for the gifts of all students will breed that same attitude in her or his students. Some ideas that might assist the teacher building inter-student respect and collaboration include:

- Post the class profile early in the year (after compiling the preference data). Discuss the areas where the class shows a distinct aggregate tendency. Ask the students to propose ways that you as the teacher can best succeed with the given complexion of the class. For example, if the class had a great majority of F's, you might ask how the class they could best approach discussions where there is potential conflict.
- Occasionally, before beginning an activity, ask the members of the class to consider the needs of students on both sides of a particular cognitive dimension. For example, during small group work, students might consider the needs of both introverts and extroverts, and brainstorm ideas to help meet the needs of both types.
- Group heterogeneously by learning style type<sup>11</sup>. Reinforce the idea that the more different types of gifts joined in a task the better and more complete the final outcome.
- After a collaborative task, ask students to recall something that happened in their efforts that showed the value of having different learning styles in the group.

Much of the sense of community that is possible in any class is going to be developed as a result of having students work in different/diverse combinations and in these groups experience collective success.

### **Principle 3: Use teaching methodologies and strategies that promote the maximum degree of success for students of all types/styles.**

The simplest way to ensure a group of students with diverse learning styles succeeds is to incorporate pedagogical practices that promote cross-type success, and avoid practices that are generally ineffective for all types. The following six practices are proven to lead to high levels of achievement,<sup>12</sup> and provide an excellent start in creating a classroom where more students win and fewer students lose.

- 1. Clear Learning Targets – If your learning outcomes/objectives and assessment criteria are clear, standing still and well communicated, both Ps and Js will benefit.**
  - Judges (Js) thrive on a transparent structure and well-articulated goals, and experience a loss of motivation and focus in the presence of a high level of ambiguity, too many changes, or a learning program that seems arbitrary. It is not

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<sup>11</sup> The most effective combination of type dimensions to use when considering grouping is that of the "academic types" (see Principle 5). Those combinations come from the first two dimensions – resulting in the four types: IN, IS, EN and ES.

<sup>12</sup> Borich, G.D. (2003) 5<sup>th</sup> Edition. *Effective Teaching Methods*. Merrill Press.

uncommon for the J to interpret the lack of clarity in the class as evidence of incompetence in the teacher.

- Perceivers (Ps) are much more comfortable in an environment including flexibility and situational adjustments, and as such are less concerned with drawing inside the lines, if those lines are seen as inessential. When the P's creatively interpreted efforts are met with a poor assessment by the teacher due to unclear learning targets, the result can be discouragement and tentativeness in future efforts.
- Outlining directions clearly, using well-constructed rubrics and written direction, and having a clear and well-communicated purpose for your lessons are each critical in promoting clear targets in the classroom.

**2. High Participation Formats – If students are engaged in highly-involved activities that require them to work as teams to solve problems, it provides rich learning opportunities where both Es and Is will have their needs more readily met.**

- Extroverts (Es) learn more from doing and are energized by working in collaborative contexts.
- Introverts (Is) are often reticent to speak up in large group settings, yet will be more likely to speak up and feel more comfortable emerging within a small group.
- Inquiry-based cooperative tasks, problem based collaborative tasks, small group cooperative centers, and collaborative projects are all examples of high participation learning formats.

**3. Clear Directions and a Culture of Listening – If students know both the big picture purposes and the practical essentials of a task, more students will know and follow the directions than if those directions are delivered without sensitivity to the needs of students who are either more abstract (N) or concrete (S).**

- The more abstract-minded intuitive (N) students will need to know “what is the point” and how a new activity fits into the broader context of the class and what has come before. Ns need to know the purpose of what they are doing or can quickly feel the task is merely “busy work.” Apathy, rebellion, or selective dismissal of assignment can result.
- The more practical minded sensate (S) students want to know “what to do” and the required steps necessary to accomplish the task. If the directions are too vague and/or general, Ss will typically feel frustrated and/or approach the task tentatively.
- Providing both the big picture and the step-by-step requirements will usually satisfy both Ns and Ss. In addition, in a classroom where students expect to listen and be listened to, and directions are followed by a clarification of the task by question and answer, students develop a “culture of listening,” where they seek to clarify the “what” and the “why” of the task before they begin their work. In this environment, student motivation, efficacy and trust are enhanced.

**4. Formal Concept-Building Exercises – The use of formal concept building activities such as concept attainment can promote the concept acquisition skills of all learners and are critical for students for whom conceptual thinking is less natural.**

- Formal concept attainment is the process of helping students move inductively or deductively from the specifics of a concept to generalizations. In an inductive approach, a class is led through an exploration of specific examples of a concept;

they then generate a definition followed by the opportunity to use that definition to classify further examples and non-examples. A variety of effective strategies for promoting concept understanding exist.

- NJ students are natural conceptual thinkers, but get a great deal of enjoyment and sense of efficacy from working with concepts in a formal manner.
- NP students are comfortable in the world of concepts, but benefit from the structured process.
- SJ students are not comfortable with random abstractions and/or disconnected theoretical concepts. The formal activity of developing a concept in a structured pattern provides both a useable model to replicate and promotes greater ease in making organizational connections among concepts.
- SP students can have the most difficulty working with concepts. A formal process provides them with a cognitive skill-building aide to make conceptual thinking more comfortable. Without such a process, too often, broader connections are not made.

**5. A Sound Social Contract and Clear Logical Consequences<sup>13</sup> – When clear consequences have been outlined and the class has bought in and committed to a collective contract, all types will experience a discipline environment that works for them and discipline problems will be minimized.**

- All students are very aware of the “fairness” of a classroom. The sensate students will focus on the degree to which rules are followed and applied consistently, and the intuitive students will attend to how well the teacher applies their basic principles of discipline.
- The thinkers will feel offended at random and personal deviations from what they expected, and the feelers will be hurt and feel personally attacked when they are disciplined for something they did not feel was justified.
- The solution to creating the perception and reality of fairness is a solid social contract where there are clear, logical and related consequences for both positive and negative behaviors that are consistently applied. When the contract is regularly and explicitly communicated and transparently applied, it reinforces the individual and collective sense that all students are valuable, have rights, and need to be accountable for their actions.

**6. Concrete Specific Feedback and Healthy Praise vs. Unhealthy Praise – When the teacher liberally uses (mostly positive) feedback language specifically related to the learning task and progress toward its accomplishment, the performance and self-efficacy of all students is positively affected.**

- Healthy praise is defined as feedback or reinforcement that is linked to the task, focused on the positive, related to the student’s own goals, and is spontaneous, natural and non-manipulative. Unhealthy praise is defined as essentially the teacher’s affection used as an external reinforcement. It makes reference to the value of the student generally or personally (e.g., “good boy”), is related to the desires of the teacher, and is typically used along with disappointment to emotionally manipulate students extrinsically.

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<sup>13</sup> Curwin and Mendler (1988) *Discipline with Dignity*, ASCD Press.

- SF students are the most attuned to the praise of the teacher. For this group they appreciate the feedback and hear “praise” in the teacher’s positive reinforcement and recognition of their actions.
- ST students gain additional motivation and clarity in their work as result of the “knowledge of results” feedback.
- NF students hear support in the feedback and positive reinforcement as well as much desired validation of their efforts.
- NT students gain confidence in their efforts and use the feedback to keep pushing toward their goals.

These are just six examples of the many teaching strategies that promote the success of the full range of students. Incorporating all the multiple intelligences into a lesson or unit is also a helpful system to provide more success for more students. Overall, a classroom that promotes each students’ internal locus of control, a sense of belonging and community and a mastery orientation<sup>14</sup>, will provide the psychological context for all students to take risks, feel confident, promote one another’s success.

Practices such as competitive grading or reward structures, uni-modal teaching delivery such as lectures, (an over reliance on) worksheets and fill-in work, and sequentially reading aloud are but a few examples of pedagogy that benefits some students more than others, yet few students very much at all.

**Principle 4: Be mindful and respectful of the needs of students on the other side of each learning style dimension.**

As we become more knowledgeable of our own preferences, it is common to discover that it has been easier to teach in ways that have worked better for the students on our side of each of the four dimensional fences. For example, the E teacher’s energy is well received by his/her E students, and the I teacher’s calm is well received by his/her I students. As suggested in the first principle, one will not win in the end by trying to be something that is unnatural, but if we do not take the needs of the students on the other side of the dimension fence into account, they often end up penalized. The first step in addressing this seeming paradox is to incorporate practices that meet a wide range of needs, as suggested in Principle 3, but beyond that we must create an environment that supports students on both sides of each dimension.

Again, we do not need to change who we are, but we must be mindful to project a validity and value for opposing orientations. While we may not personally understand why students on the other side of a dimension have a particular set of needs, we can certainly show an appreciation that they do have such needs. Most teachers find that considering the requirements of those on both sides of the fence makes them better teachers as well as more complete people. Table 1 outlines a sample of considerations for teaching students with opposing preferences.

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<sup>14</sup> Carol Dweck, in *Self Theories* (1998) contrast the development of two attitudes in students – a mastery orientation, based in the attitude that ability and intelligence grows as a result of commitment to the process of learning, and a helpless pattern that grows as a result of a belief that intelligence/ability is fixed.

**Table 1: Effective Teaching across Type Dimensions**

<b>Introverts teaching Extroverts</b>	<b>Extroverts teaching Introverts</b>
<ul style="list-style-type: none"> <li>• Use group work and cooperative learning</li> <li>• Use wait time with questioning</li> <li>• Provide time for movement</li> <li>• Value expression</li> </ul>	<ul style="list-style-type: none"> <li>• Provide individual tasks</li> <li>• Call on all students regularly</li> <li>• Provide written venues for thinking</li> <li>• Value reflection</li> </ul>
<b>Sensates teaching Intuitives</b>	<b>Intuitives teaching Sensates</b>
<ul style="list-style-type: none"> <li>• Provide opportunities for creativity</li> <li>• Give students the “big picture” of their work</li> <li>• Use concept attainment and problem-based strategies on occasion</li> <li>• Teach inductively on occasion</li> <li>• Don’t overemphasize the details</li> </ul>	<ul style="list-style-type: none"> <li>• Provide hands-on activities</li> <li>• Give clear step-by-step directions</li> <li>• Explain the practical application to work</li> <li>• Avoid long abstract or theoretical lectures</li> <li>• Value the quality of students work</li> </ul>
<b>Thinkers teaching Feelers</b>	<b>Feelers teaching Thinkers</b>
<ul style="list-style-type: none"> <li>• Remember to show your warm feelings</li> <li>• Avoid excessive conflict in your teaching style</li> <li>• Include praise in your feedback</li> <li>• Avoid being too critical</li> <li>• Express your joy or pleasure whenever possible</li> <li>• Value feeling in written work</li> </ul>	<ul style="list-style-type: none"> <li>• Do not rely too heavily on praise</li> <li>• Give concrete feedback</li> <li>• Try to accept some degree of healthy conflict</li> <li>• Be consistent in your application of principles</li> <li>• Don’t be afraid to be give honest feedback/critique</li> <li>• Value logic in written work</li> </ul>
<b>Judgers teaching Perceivers</b>	<b>Perceivers teaching Judgers</b>
<ul style="list-style-type: none"> <li>• Allow for some flexibility in assignment format</li> <li>• Incorporate variety</li> <li>• Provide clear written assignment guidelines</li> <li>• Allow for flexible time frames for completion</li> <li>• Value novelty and open-mindedness</li> </ul>	<ul style="list-style-type: none"> <li>• Provide clear written assignment guidelines</li> <li>• Prepare students for changes in plans</li> <li>• Try to keep to the agreed-upon schedule</li> <li>• Provide some routine in the day</li> <li>• Value accuracy and punctuality</li> </ul>

It can be helpful to periodically reflect on the effectiveness of a lesson. You might do an informal analysis of who appreciated, scored well on, or appeared comfortable with any given task. If there seems to be a trend in who was more successful (i.e., if those who did well seemed to be mostly sensate (S) students), consider what you might do in the future to make the activity more accessible to your other students.

**Principle 5: Provide opportunities for students to work in their strength areas for some part of the overall learning experience.**

All students need to spend some part of each lesson or day working to their strengths. Each of the four academic types (i.e., IS, IN, ES, EN)<sup>15</sup> has different strengths, preferred modes, and activities in which they will feel most comfortable. Table 2 briefly outlines the student profiles and some of the needs of each of the four types.

**Table 2: Learning Profiles of each of the Four Academic Types – IS, IN, ES, EN**

	<b>Extroverts (E)</b>	<b>Introverts (I)</b>
<b>Sensates (S)</b>	<p style="text-align: center;"><b>ES Action-oriented realists (@36%)</b></p> <p>Let me work with my hands and create something practical. Some people may call me a “kinesthetic” learner, but I would rather call myself a “doer.” I like to be part of a team and see practical results from my/our work. I have a strong need to contribute and be recognized. Don’t just explain how to do something to me, at least show me, and better yet, let me try it out. I learn from doing and then reflecting on what I have done. If you want me to understand an abstraction let me discover it inductively, or I can have a difficult time integrating it into a big picture understanding. Written directions can be really helpful to me. If you expect me to continually sit and listen to a lecture and then do well on a test later, I will likely disappoint you much of the time.</p>	<p style="text-align: center;"><b>IS Thoughtful realists (@36%)</b></p> <p>Let me work independently on tasks that are clearly spelled out. Let me work with facts and information and I will be able to use my power of insightful realism to come to sound, well thought-out conclusions. Give me a chance to be careful and thoughtful. I will be your most dependable and steady student if you give me work where the directions are clear and the desired outcome is understood beforehand. Give me recognition for my care and persistence since those are my strengths and I may not draw as much attention to myself as some of the other students. When you give vague careless directions or just expect me to “be creative” with no guidelines, I will likely feel some uneasiness and maybe even some resentment.</p>
<b>Intuitives (N)</b>	<p style="text-align: center;"><b>EN Action oriented innovators (@16%)</b></p> <p>Let me work in situations where I can use my communications skills in my learning. If I am working in a group where there are chances to be creative, I can get really motivated. I am a much better student when I am “into the task” as opposed to when I am “not into the task.” I like to be inspired and see the purpose behind the work. I have an expressive energy that comes out when I am comfortable, and it helps me draw out my creativity and make connections across content. Talking, discussing, role-playing, debating are natural ways for me to tap that energy source. Peer tutoring a subject that I am good at is one of my favorite things to do. Projects where I can solve problems and draw energy from working with others and overcoming challenges are also areas where I feel very confident. When there are too many details, routines, lectures or the same old thing all the time, I may turn my creative energies into behavior that you may not like.</p>	<p style="text-align: center;"><b>IN Thoughtful innovators (@12%)</b></p> <p>Let me work in situations where I can come up with my own ideas whenever possible. I don’t have as much trouble as some of the other students in being creative. I am often surprised when I see that I sometimes see deeper realities that other students miss. I like to come up with stories, draw pictures, or think of new ways of doing something. Some people call me a “visual learner” but I just feel more comfortable studying something for a while and understanding how it works before I try to do it or talk about it. I will be the last to volunteer usually, but I will work to master it long after the other students have moved on to something else. I need to be able make connections with the current subject and the previous subjects, so let me know the purpose behind what we are doing before you tell me what to do. If you ask me to do work that is pointless, inconsistent, or irrelevant then you will probably see me become at least a bit cynical and/or irreverent.</p>

While it is not reasonable to individualize a program for each student, it is useful to consider each type when planning a lesson or unit and ensure that all students have opportunities to work to their strengths. One idea is to give choices of activity or preferred modes of

<sup>15</sup> These types are derived from combining the preferences from the first two dimensions – Introversion/Extroversion and Sensation/Intuition. These first two areas combined have the most effect on academic performance according to Lawrence, G. (1987). *Teachers Types and Tiger Stripes*. Palo Alto: Consulting Psychologists Press. Type profiles © Paragon Consulting 2008.

accomplishment for lessons. Another idea is to structure activities that work to the strengths of each of the types for some of the period. While it is good to stretch students in their inferior functions, and to have them take on a variety of group roles, occasionally it may be effective to let students choose their own roles within a substantive group effort. For instance, if they so choose, let the EN be the leader, the IN the artist, the IS the manager/recorder and the ES the presenter. If your teaching involves station/center work, consider a series of activities that suit the strengths of each of the four academic types. If a student works in their inferior function most of the time, they will likely become less motivated or perform below their potential. However, most students, given opportunities to work in their comfort/strength area for some of the day will be able to transfer that confidence into more uncomfortable or challenging tasks.

### **Conclusion**

Introducing the lens of cognitive and learning styles provides insight into pathways to success for more students more of the time. Yet it cannot be approached as an additive strategy. If we do not undertake a fundamental analysis of how we teach, any revelations that come to us or our students as a result of taking the PLSI, will likely fade into an “interesting” yet distant memory. We need to make an effort to reform the way we think about teaching, beginning with a process of self-reflection. As we learn more about our own tendencies and how they have limited us in the past, and come to understand the needs of our students--especially those who are different from us--we are naturally drawn to more tools to meet the challenges of teaching. Along with the many other important lenses with which we view the diversity of our students’ needs and behavior, a systematic approach to learning styles provides a roadmap to a more complete and sound understanding of who our students are, and helps us teach and act more consciously, deliberately and effectively.