

Awardee Meeting National Trainers' Exchange Program

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It is important to recognize that teachers have different teaching styles and students have different learning styles. Using one style of communication all the time is not the most effective way to get through to every student. The aim of all instruction is to maximize learning outcomes, and if we can match the students' learning styles to our teaching styles, this should improve by geometric proportions.

Having said that, is there a simple way to identify teaching and learning styles? I noticed many years ago after examining a variety of learning style instruments, that the questions were very similar to the personality items on the Myers-Briggs Type Indicator which I have been using since 1961. I found this instrument valuable not only in identifying learning style differences but also teaching styles.

Changing teaching styles requires changing teacher behavior. It needs to start with the beginning planning stages of instruction as we identify learning objectives. Developing the ability to change teaching style has to be more than a nice idea I might try someday. It is crucial to effective teaching and requires constant reminders to us to flex what we are doing.

THE FOUR TEACHING STYLES

THE THINKING-STYLE TEACHER

Description: After observing hundreds of teachers in higher education, I concluded that the predominant pattern of teaching follows the thinking-style pattern with clear organization, handouts, assignments, lectures and interactions with students. In this pattern, tests are used as the measure of learning outcomes. In the classroom setting, there is an atmosphere dominated by teacher talking and students listening. Students are rewarded verbally when they are keenly paying attention. Very often the thinking-style teacher will call on particular students to check on content by asking factual questions that have a correct or incorrect answer. If students understand and remember the facts, they are considered successful. Thinking type teachers will have written handouts that are logically sequenced for content, consistent with past lessons and assigned readings dealing with the facts. If homework is assigned and papers are turned in, teacher comments indicate the material has been precisely reviewed and labeled with value judgments containing specific criticism.

Management and Discipline: Thinking-style teachers spend a huge amount of time planning each session and their syllabi objectives set the boundaries for scope and sequence of content. They use time in a planned, structured, detailed way so that every moment in the class is thought out in advance. They make reminder lists for everything they do and they often integrate material they have used in previous years that worked well. There is no "waste of time" in this atmosphere. Classroom behavior standards are precise and clear. Students do not make the rules; they follow them and if they are not on time and ready to work, they are politely chastised. Students can predict what will happen if they break the rules because the discipline is consistent from class to class. Thinking type teachers see control and respect for their authority as essential. If challenged, they will discipline quickly and directly in order to develop a respect for their rules. They also tend to value students who are neatly dressed and they seldom acknowledge creative student answers, which they see as not very valuable. Such creative students are not rewarded because they do not fit the mold. In addition, Thinking-style teachers see high-energy, creative students as troublemakers trying to get the teacher off track.

THE FEELING-STYLE TEACHER

Description: Feeling-style teachers look forward to classroom interaction because they value contact with other people. Their concern for people can be observed in their selection of objectives. In addition to the topical outlines, one often sees references to real life out-of-school situations involving stories designed to understand human emotions. When students answer questions in class dealing with content, and they add their own personal comments, they are accepted, clarified and rewarded with praise. Feeling style teachers will reward creative contributions, especially when students express empathy and compassion. Feeling-style teachers will often leave the lecture podium to get closer physically to the students. They will notice a student who is ill or perhaps asleep and deal with this in a gentle manner. When there is laughter in the classroom, you will find these teachers are laughing **with** their students, they are not laughing **at** them. If you visit their offices, you will find personalized things such as plants, pictures of their families, artwork (some artistic and some not so artistic) that are valued. Very often you will hear them listening to some soft music while they are planning their lessons.

In the classroom, analysis of communication will show a great deal of shift from teacher initiated content to student-initiated questions. This produces a shift in the learning curve upward, a warmer environment, and a boost in student morale.

Feeling-style teachers will use instructional methods that will tap emotional responses from students. Dramatic storytelling that relates to the content will be a favorite method. Another technique they use is having students role-play as victims of chronic illnesses such as asthma or cancer. Students can then be asked to write a creative reaction to

the parts in the role-play that really affected them. It might be something that actually happened to them in real life that was similar to the role-play.

Management: Even though the course of study contains the curriculum guide, specific time lines will not be used when planning lessons. There will be less structured activity that allows for more spontaneous response from students based on need. Teachers who employ this style spend a great deal of energy in motivating the students to learn the content. They share why they as teachers find the content so relevant and interesting and meaningful. This enthusiasm seems to become contagious because it feels right. Students are evaluated in a multifaceted way. In addition to test scores, test feedback is used so students see what they need to learn. This develops a positive bond with students. Feeling-style teachers have a respect for student rights and student feelings. Students who help each other in content and skills are rewarded. Students who show appropriate humor are rewarded. Students who use their originality can get a decent grade even if their spelling and grammar are atrocious.

Discipline: Criticism from thinking-style teachers can be a problem, and feeling-style teachers are often described by their thinking-style colleagues as too touchy-feely, impulsive, missing important details, moody, easily hurt, unpredictable, clinging vines or romantics. Feeling-style teachers tend to see thinking type students as refrigerators without overt feelings.

THE SENSING-STYLE TEACHER

Description: Sensing-style teachers love hands-on activity. They are action oriented so their lectures will be interspersed with simple tasks that require little time. These are down-to-earth activities that require using the senses to evaluate solutions. They love to work with students and thrive in competition. They don't waste a single second and they can do lots of things all at the same moment. They are good at sizing up problems and are quickly able to identify solutions. Their pacing in the classroom is rapid. Otherwise they get bored. If teaching anatomy, they will have lots of working models and illustrations. Visual aids are all over the place. Students who solve problems quickly and correctly are recognized and rewarded. The last one finished is a drag, and gets little or no reward.

Management: Management of the sensing-style classroom is difficult in lecture halls with bolted-down seats because it is harder to get students to move around. Such a teacher will not lecture for two hours or show a film for sixty minutes. This is too passive. Active field trips such as the city morgue can stimulate activities in the class. Designing a competitive surprise activity for the "me-here-now" sensors acts like magic. Learning occurs in these classes from the concrete to the semi-concrete to the semi-abstract to the abstract and never in reverse. Sensing teachers always try to use concrete experiences to connect the known with the unknown. Most of the content is relative to the world today. History is dead and the future unpredictable. So, integrating

concepts are always made simple using familiar objects, pictures, drawings and charts to illustrate the point.

THE INTUITIVE-STYLE TEACHER

Description: Intuitive teachers see possibilities in everything. When planning lessons, innovative ideas, especially those based on concepts are described in broad outlines. Albert Einstein used a classic intuitive-style when he challenged traditional wisdom about energy in the atom. Sensing teachers see this style as chaotic and prefer to implement solutions to old problems rather than solve new ones.

New, creative ideas, which give meaning to mundane things, can help students to generalize and integrate the old with the new. Intuitive teachers place heavy emphasis on the process rather than the outcome. In fact, when the process is completed, they get bored with the routines that follow. Students who learn to independently think through a problem and make up their own minds, are rewarded with higher grades.

Intuitive teachers will reluctantly do the written lesson plans and objectives, but much prefer to have a wide open structure which they carry in their minds. Their desks are usually messy, filled with loads of books and scattered papers, which they will describe as organized confusion. Others see them as cluttered and disorganized because they can't always find the things they need.

Management: The absence of structure in the classroom is apparent. Enrichment activities are valued and become more important than the formal curriculum described in the syllabus. Intuitive teachers really enjoy having fun with students. They know the past and present exist, but the real excitement with content lies with the future. How will our knowledge, concepts, generalizations be different in the future? The emphasis here is in stimulation of ideas rather than specific outcomes. So traditional outcome measures, which test content knowledge, are difficult to design. Intuitive teachers tend to prefer essay exams.

While thinking teachers do more talking than asking, intuitive teachers do just the opposite. They ask, ask, ask and never run out of questions. Usually the why and how questions dominate the style. It is not enough to know Einstein's formula, $E = mc^2$, but the question of why this is important and what impact it made on society is the bigger idea. Students who experience an intuitive-style teacher will learn how to challenge and think through problems for themselves. So the major goal of this teacher is preparation for a lifetime of learning. The process of discovery of solutions to new, real problems can motivate students to research ideas and become the Einsteins, the Edisons and the Galileos themselves.

MATCHING THE THINKING-STYLE TEACHER TO THE ...

Feeling-style student:

1. Acknowledge students who identify certain areas of content containing emotional judgments even if they are negative. Remain calm even if judgments are negative.
2. Call on students from time to time and ask them what they have learned from this session. Your Feeling-style students will feel that you care about them and you can gain valuable insights into how your content is coming across – what needs further emphasizing and what can remain the same.
3. Ask for volunteers to prepare and teach for you an area of your content. Your Feeling-style students will appreciate the chance to be helpful.
4. Plan to have much more time for oral discussions where students are reacting to other students. Moderate discussions so that other students don't gang up on your Feeling-style students. Set the rules for interaction so no one gets hurt.
5. Reassure feeling students who fail examinations and let them know that a score on a test does not measure their personal worth.
6. Increase amount of verbal praise when students do well.
7. Plan enough office time so feeling students can interact with you on a personal level.
8. Move away from the podium and move physically closer to your students.

Sensing-style student:

1. When planning lectures, utilize as much concrete stuff as you can, possibly digging up objects to illustrate concepts with pictures, films, transparencies, drawings, cartoons, models and down-to-earth humor. Fill your classroom with objects, models and graphs. Encourage your Sensing-style students to get their hands on the models and objects.
2. Sequence the content in small, continuous, bite-sized chunks, and go step-by-step.
3. Relate the content to as much real world as possible to show application.
4. Start with simple concepts, progressing to more complex ones.
5. Challenge students with competitive exercises.
6. Arrange for public figures to visit and speak about the content.
7. Have students write and submit quiz questions for practice.
8. If you have a demonstration to do, bring your students in close.
9. Give your Sensing-style students activities to do while they wait for everyone else to finish.

Intuitive-style student:

1. Include in your testing questions, the implications of applying factual data to future possibilities.
2. Ask intuitive students to make predictions using statistical data.

3. Ask them why they think your content is important and how they come to those conclusions.
4. Ask them how they will use the material being studied.
5. Ask them to make recommendations on how to better teach the same material you are teaching.
6. Try some essay tests instead of all multiple choice or true-false tests so they have an opportunity to be innovative.
7. Try not to read lectures from the podium. Talk with them about the data presented on Power Point slides. They can read the slides themselves.
8. When your Intuitive-style students come up with creative, oral responses, give them lots of "atta-boys".
9. Use appropriate humor in your presentations.
10. Talk about the future in your field of study and the exciting times that are to come.

What will make it easier for the Thinking-style teacher to flex to his or her students? Use your logic and planning strengths in a new way. Plan for unstructured time. Prepare for emotional issues.

MATCHING THE FEELING-STYLE TEACHER TO THE . . .

Thinking-style student:

1. Provide students with detailed handouts with content logically presented in outline form. Leave spaces so students can write in their ideas.
2. When students request information, give it to them.
3. Have tolerance when Thinking-style students argue for points on an objective test. It's not personal.
4. Teach them ways of disagreeing with you that can still be acceptable.
5. Give them reasons for the boundaries you set for all activities and make sure boundaries make sense.
6. When criticizing written work, share your thoughts in detail.
7. Respect differences even if you see behavior you consider as close-minded.
8. Have them look over several textbooks and pick one for class.
9. Encourage additional outside reading and ask them to recommend or not recommend such readings to classmates.
10. Make sure your tests reflect what you have taught and what you stressed; otherwise your Thinking-style students will feel your tests are unfair.

Sensing-style student:

1. Break down complex concepts into smaller concepts.
2. Whenever possible, draw pictures, bring in models and objects to nail down concepts. They do best with hands-on learning experiences.

3. Tell them some good stories that describe your own experiences in the real world.
4. Have them practice known skills many times.
5. Limit problem-solving activities to the present time rather than the past or the future.
6. Have them take apart mechanical devices first and then read the theory.
7. Select textbooks that are self-instructional, such as programmed instruction.
8. Give them lots of quizzes with immediate feedback on what they need to learn.
9. Besides grades, rewards should include verbal supportive comments.

Intuitive-style student:

1. Challenge the Intuitive-style students to solve some new problems by identifying possible alternative solutions.
2. Encourage these students to be organized when writing papers even if painful. Let them know you understand the pressure.
3. Suggest ways to overcome boredom with your content by asking what they really care about.
4. Describe the minimum structure you expect for completing assignments.
5. Whenever possible, stimulate them with enriching activities just for fun.
6. Use subtle, appropriate humor as part of content presentation.
7. They much prefer essay exams where they can express their independent thinking rather than multiple-choice.
8. Ask them to make recommendations to remove or change portions of the curriculum.

What will make it easier for the Feeling-style teacher to flex to his or her students? Use your caring and sensitivity strengths in a new way. Empathize with your students' needs. Care about giving your students what they need to succeed.

MATCHING SENSING-STYLE TEACHER TO THE ...

Thinking-style student:

1. They prefer to think through ideas and consequences of action before acting, therefore they are not as fast as sensing students and do not always have the confidence. Give them more time on exams and practicals. Thinking-style students prefer to think through ideas and the consequences of their actions before doing anything else.
2. Make sure the number of test items from a particular area reflects the relative time spent in the topic, otherwise the test will be considered unfair.
3. Control the amount of movement and noise in the classroom. Thinkers see noise as chaos and are uncomfortable.

4. Discipline students who make fun of the "egg heads" in class.
5. Students of this type can read and comprehend theory and then apply it to the real world. Ask the Thinking-style students to explain theories to the rest of the class. They'll do a good job and enjoy the chance to operate in their preferred mode.
6. Whenever possible, relate your content to past history and to the present and future. All are important to thinkers as they see the threads connecting the dots.
7. They can stick with a learning film much longer than other students. Their concentration level is usually strong.
8. Create a time line of events or achievements in your discipline for the Thinking-style students.
9. Realize that your Thinking-style students are not good indicators of boredom or a need for a break. Thinking-style students have the ability to concentrate longer than other styles.

Feeling-style student:

1. Pay more attention to past years' events for feeler students. Your Feeling-style students want to know what led up to the present.
2. Share good emotional stories with them you can remember from your personal life. Your Feeling-style students will use the emotions to remember the facts.
3. Make some time with each class session to interact with the feelers; they will bond with you and motivation will increase. Spend some face-to-face office time with your Feeling-style students.
4. Put the number right on returned tests, not the number wrong.
5. Tutor them on areas they have failed and be available to answer their questions.
6. They need lots of praise and encouragement for reaching out and attacking new ideas.
7. When you need to criticize work, do it swiftly and without becoming a nag.
8. Try to always suggest ways to improve learning outcomes and share with them how much that pleases you.

Intuitive-style student:

1. Allow for divergent views in class even when it seems they are way out.
2. Utilize brainstorming groups for solutions to different problems and allow plenty of time to do this. They will have great success with this if you can arrange small groups.
3. Have them read different books that deal with the same topic so they learn that books do not always agree even when written by experts.
4. Acknowledge that it is normal to make mistakes, that is why they put erasers on pencils.
5. Let them know you value their completing a task even when they have lost interest and may be bored.
6. Acknowledge that people who think differently are "all right". They are just different. Not everyone has to be the same.

7. Give your Intuitive-style students "atta-boys" for contributing new slants on the content you are teaching.

What will make it easier for the Sensing-style teacher to adjust to his or her students? Use your me-here-now and joy of competition strengths in a new way. React to the signals your students are sending you. Win with your students' academic success.

MATCHING THE INTUITIVE-STYLE TEACHER TO THE ...

Thinking-style student:

1. They thrive on numerous tests that are announced, but not spot quizzes.
2. Make sure rules are clear and everyone is treated equally.
3. Announce future lessons so thinking-style students can systematically do their homework. Giving handouts the week before helps to facilitate this with these students. Other types will not read these in advance.
4. When thinkers raise questions in class based on their ideas, carefully analyze the questions, clarify the meaning and either answer them or ask other students to reply.
5. They love to debate minute issues and they believe being correct is more important than the person saying it.
6. As the teacher, expect some criticism on evaluations of your class. They don't mean to be, but they can be very dogmatic and judgmental, especially if you make even minor mistakes. If you misspell a word, you will hear about it.
7. Encourage your Thinking-style students to develop more diplomatic ways of pointing out mistakes and errors. Remind them of the logic of not alienating their classmates or instructors.

Feeling-style student:

1. Teach the same content in a variety of ways, some of which will motivate feelers when there is congruence in style.
2. Feelers need special kinds of verbal rewards when they do a task and it is done well. They need that reward on the spot.
3. Reward behavior even if it is just participating in the group.
4. When they are involved in content that captures their interest, learning will be enhanced.
5. They need to be told the only failures in this world are those who do not try. Do your best and you are a winner.
6. Acknowledge assignments that are especially difficult. Let them know you appreciate their trudging through such content and did an outstanding job.
7. Feelers love to help teachers. Make them your assistants and recognize their contributions.

8. Share stories about other former students who have interesting experiences, especially those with feelings involved.
9. Give rewards even for something as small as participating in the group. When your Feeling-style students feel valued by you, they will do their utmost to keep you happy. They want to please their teachers.
10. Find a hook that will capture the interest of your Feeling-style students. They will learn best when they are interested.
11. Design a grading plan so that students can fail an exam or quiz and still improve to pass the class.
12. Give your Feeling-style students opportunities to help you or their classmates. They will enjoy the chance to operate in their preferred mode.

Sensing-style student:

1. Needs to have definite, prescribed ways to solve problems.
2. Emphasize the me-here-now time frame. If dealing with historic facts, always take time to bring up-to-date. They live in the present. Enjoy it with them.
3. They do not like essay exams, but do well with multiple choice.
4. If they express an opinion in discussion, do not press the why or how of their ideas.
5. Structure a formal debate in a current, concrete topic and make it as competitive as possible.
6. They need action-oriented activities. Get them out of their seats.
7. Because of their energy level, these students may be the first to finish everything assigned. Encourage them to proof read and correct errors.
8. Encourage neatness even though they want to get tasks done quickly.
9. They get bored easily if they have to wait for others to finish. Make them your assistants for classroom management.
10. Design activities for your Sensing-style students to do while they wait for other students.
11. Create a model of the level of quality of work you would like submitted. Your Sensing-style students need to see your standards.

What will make it easier for the Intuitive-style teacher to flex to his or her students? Use your creativity and imaginative strengths in a new way. Create learning environments for the different types. Imagine your students' different needs.

EXAMPLE OF FLEXING THE TEACHING APPROACH FOR THE GI SYSTEM

Using the Socratic method has become a valuable strategy in getting students engaged in the learning process. It is a powerful effective tool for all learning styles, but the approach needs to change for each teaching style.

Any style teacher when approaching a topic like the human digestive track would make detailed plans of the content and would tell the students the names and purpose of each enzyme, which nutrients were involved, the purpose of the acid, and the ultimate purpose of digestion which is to make all foods soluble in water so that they can get into the vascular system by osmosis and diffusion. Flexing this strategy with thinking style students would be simply to place each declarative telling statement into a question form. For example, what are the names of the digestive enzymes? What do enzymes do for digestion? Why is acid necessary for enzymes to function? What kinds of things pass through cell membranes? Why do we say that the digestive track is really outside the body? What processes are used to get nutrients inside the body? What do we see as the whole purpose of digestion? This shift in strategy would really engage the minds of the students, remove them from a passive role, and get them thinking through the concepts. The telling-memorizing mode might be adequate for knowledge of facts in the short run, but much of what is memorized is lost. When the thinking style teacher uses questions with the same content, it forces the how, why, what if and concepts that are like a thread holding together the facts. These concepts can last a lifetime even when the facts are forgotten. The bottom line is students learn to collect information, make choices, see and weigh options, use information to hypothesize other related questions, and understand the essence of some very difficult problems.

Teachers might flex their style to sensing learners by starting with a real experiment. Placing a hard-boiled egg in a dish, adding some protein enzyme with a little acid would cause the egg to dissolve in the water. The same thing would happen with any fat if some bile and acid were added to the dish. The teaching questions would include: Where did the egg and fat go? Would this work without the acid? If we set up a plasma membrane, would the digested egg and fat go through to the other side? If so, why? Will undigested food go through the membrane too? What are the biological processes called that allow things to go through the membrane? How are nutrients transported to every cell of the body? Why are the cells in the digestive track similar to the plasma membrane? When you answer these questions, make a decision about why we digest food.

All teachers might flex their style to intuitive learners by asking them to design an experiment that would demonstrate how enzymes process foods. They will probably come up with the how, what if, and why statements without much teacher assistance. The teacher question might be, "find as many books or computer resources that you can which deal with and raise questions about the digestive process." Narrow down your resources, design your experiment, and present your findings and conclusions to the class. Include in your presentation why some of the sources were not helpful in solving your questions. If you still have unanswered questions, let's do some brainstorming.

Teachers might flex their questioning style to feelers by asking them to be an assistant when designing the experiments for the sensing students. Otherwise they will benefit from any of the designs described, as long as they know they will be pleasing teachers and there is no threat of failure. Questions like, "how do people feel that have

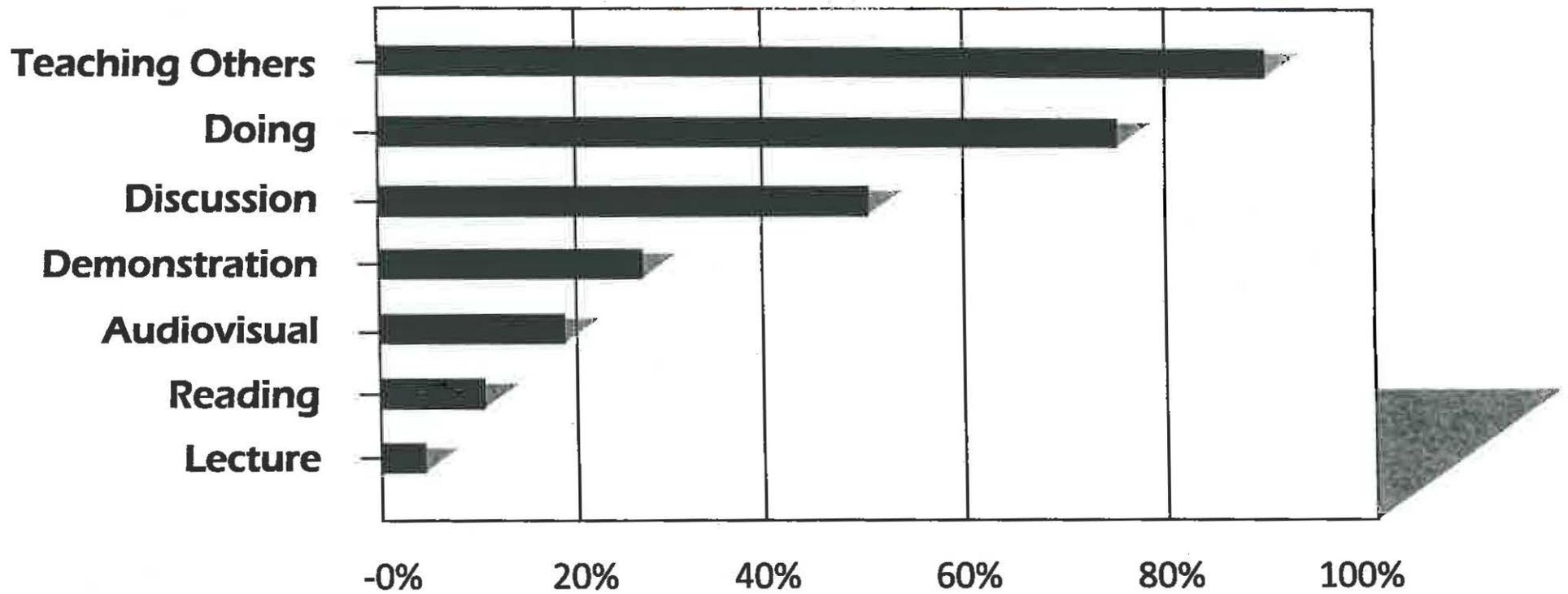
indigestion with almost everything they eat” would be energizing to such students. *Do you know anyone like this? What would happen to them if they were not able to eat anything?*

One reason many instructors bypass these flexing strategies is the need for extensive coverage of content in a limited amount of time. Engaging students in the thinking process by style flexing takes more time but also results in more lasting learning. Questions drive thinking. When the answers are given, thinking usually stops. However, when answers generate more questions, thinking continues. What is the value when content is “covered” when we need to uncover the hidden questions that stimulate thought?

It may be true that students are thinking and learning when they are either asked teacher questions or they are raising their own questions. What a neat evaluation a teacher would have if students were asked after the lecture to describe questions they have concerning the content. This would be a true measure of an engaged, active mind. When content questions generate new questions, then thought-stopping answers would not prevail. This is especially true with the revolutionary expansion of content in geometric proportions. Spoon-feeding of endless content will fail and result in little or no time for the deep questions that go beyond knowledge of facts. Such questions develop skills in critical thinking that include evaluating sources of information, discriminating among points of view, deciding what is logical, and making reasonable conclusions.

If we as teachers want students motivated, we need to accept that responsibility. It is part of teaching to stimulate interest in content. The first step in that process is that teachers planning content need to formulate their own questions which engage their thinking and stimulate their new thoughts even if they have taught the same content for years. In fact this is probably true in spite of the way they have taught before.

So if we accept John Dewey’s concept that questions are the very core of teaching, then flexing our approach really makes sense. The crucial element is: do the questions really challenge thoughts? Are we only looking for factual answers to factual questions, or are we probing for the higher level processes described in Blooms’ Taxonomy such as analysis, synthesis and application of concepts? One might ask whether our questions are narrow or broad or open-ended enough to provoke many possible options. Figuring out answers is not the same thing as remembering answers. It is also true that the questions should not be so vague that the learner really does not understand what is being asked. For example, asking students “what about Einstein’s’ theory of relativity” has no meaning. What is being asked? It is also crucial that after asking a well thought out question, there needs to be sufficient wait time for the learner to go through several thinking steps to find answers. While it may only take 3 or 4 seconds for simple factual questions, higher-level ones can take 15 to 20 seconds for learners to respond.



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