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Understanding Learning Styles: How to become a More Effective Classroom Instructor

Hans M Hirschi – Autodesk

ED115-2 Learning - what a basic concept, yet such an important one for all of us who teach. Learn the basics of how the human brain works and the what, when, and why of learning and forgetting. Why is it that we easily reach some students while others elude us? Do you treat all your students the same way? Or do you try to adjust your teaching methods to your students? How can you tell which student needs what? Do you think your students know what they want and how they learn most efficiently? We'll look at different learning styles and how you can use them to facilitate learning. We'll even include a test to show you how you learn and some examples of just how easily our minds are fooled! Apply these practices to your training and you'll have happy students wanting to come back for more. Please bring your own tips & tricks to share with your peers!

Key Topics:

- What is learning?
- What are learning styles?
- Understand your personal learning style
- Different ways of learning
- How to use learning styles when teaching

Target Audience: Professional trainers, instructors as well as others interested in learning.

About the Speaker:

Hans M Hirschi is the Manager for Autodesk's Authorized Training Center Program in Central & Northern Europe. Before joining Autodesk he worked as an independent e-learning consultant, corporate training executive and banker. He has majored in linguistics, literature (post-grad studies in Nordic literature), psychology & adult education. He's the author of a bestselling book on e-learning pedagogy in Sweden and he is frequently published with articles on training, communication, e-learning and the training industry.

Hans also trains pedagogic classes & presentation skills and is a sought-after speaker at events all over the world including AU. He serves on the board of Directors of the Computer Education Management Association (CEDMA Europe) and is a long standing member of the American Society for Training and Development (ASTD).

Hans was born and raised in Switzerland and loves his island retreat in the Gothenburg archipelago; he enjoys travelling and is infamous for speaking more than one language...

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Introduction - Why bother?

This hand-out has a couple of purposes from my point of view: One, it should serve as a reference guide and provide you with some of the aspects of the topics covered during the actual lecture and second, hopefully it will be a tool for you to come back to every now and then, to look things up and refresh your memory.

There is an inherent conflict in lecturing about a subject as complex as human learning in 90 minutes. I've studied this phenomenon for 20 years now and I'm still learning about the intricacies of human learning every day.

I do applaud you for joining this class however and thank you in the name of your future students for your interest in increasing their chances of learning more and in a style that is better suited to their needs. After all, as trainers, our students (whoever they may be) are the main reason why we go to work every day.

Ideally, we would know our students before they come to your classroom, before they start to learn. We would be able to profile them, to understand their needs in great detail in order to tailor our way of teaching to their specific needs. After all, no one understands their learning preferences better than the student, right? Wrong! Or at least, it isn't entirely true. A dear friend of mine once said in flawless Singaporean: "Customers don't know what customers don't know!"

You could also say that your students not always know what's best for them. Now don't get me wrong, personally I think they do, but not always on a conscious level, but why is it that some students skip lectures and still pass their exams while others spend hours cramped over books without learning much. Making that process visible, helping your students to better understand how they learn will greatly increase their chances of achieving better study results. But it gets even better, because there are things you can do as an instructor to facilitate learning without having the students necessarily being aware of their learning styles. After all, what good does it do to know how you learn if your teacher won't cater to your needs?

I once had a professor during my communication masters class who refused to hand over his PowerPoint slides to us, in order for us to take notes. He felt very strongly that by copying what he had already written, we would learn. Unfortunately that may work for some, but for most of us it meant that we spent most of the lecture copying his slides rather than listening to what he said, taking additional notes, asking questions and ultimately paying attention.

So, as a trainer, by catering to all learning styles, you can accommodate your students without them really knowing what their learning style is, they'll naturally assume and adapt to what they feel most comfortable with.

The following are tips and tricks on what you can do. I hope they are as helpful to you as they've been to me over the past years.

Learning in General

There is only so much you can squeeze into a 90 minute seminar at AU and there is no sense in 'squeezing' in more than can be absorbed. This is also at the heart of what learning is all about. Over the years I have developed my own learning methodology, dubbed "HERMES method" to help trainers structure their content and to come up with classes that make sense to the learner and maximize their output.

Learning is a process that involves the brain and that little organ of ours is crucial in the process. Psychological research is uncertain as to when the brain starts to learn, but we know for certain that it starts well before we are actually born. We know for example that a fetus reacts physiologically to the voice of his/her parents after having learnt to recognize those voices and discern them from others. The human brain is also one of the organs in our body that doesn't get much rest in life. It's operational 24/7 until the moment we die and even in sleep, information acquired throughout the day (and beyond) is processed, stored and new neural pathways are built. Some claim that our dreams are a way for the brain to sort out information that does not seem to fit earlier patterns and parameters. There is still much about the brain that is unknown to us and science is only slowly discovering the wonders of it.

a. Perception

Perception lies at the heart of learning. All sensory input that reaches us has to be treated somehow. In the brain, that is being done by the Thalamus. You could compare the Thalamus to an extremely powerful and efficient switch board that accepts and deals with 11 million phone calls every second. Just imagine the processing power. Most of that information is visual, (roughly 10 million bits/s) and the rest is mostly information from our skin and muscles keeping the brain apprised of the body's well-being (about 1 million bits/s). The least information comes from our taste buds, only about 1000 bits/s.

The really interesting part in all this is that our conscious mind can only process about 40 bits/s. This is still an awful lot, but far less than you'd expect. The brain stores or discards the rest of the information according to pre-defined sets or schemes that govern most of our lives. Let me make two examples to illustrate this. Try to remember the last time you drove to the office. Do you remember all the red-lights along the way, all the turns you took, when you had to slow down for traffic, cars you overtook etc? In all likelihood you won't. You will also not be able to remember all the muscle activity going on. Driving a car or riding a bike is such a trivial task to us that we do it unconsciously. It's only when something out of the ordinary occurs that the brain switches on the consciousness (e.g. someone walking out into the street right in front of our car). That happens so quickly that we don't even notice when it happens. But try to imagine that you would have to drive consciously and steer every fiber of your muscles, your eyes etc. Where would you start? It just wouldn't work and that is why beginner drivers are more prone to accidents as they spend too much time thinking about what to do, making them slow to react to their surroundings. Remember your very first time sitting behind wheels?

The other example I'd like to make is "party chatter". Ever been to a cocktail party talking to a group of people when you suddenly hear your name being mentioned somewhere else in the room? You instantly switch your attention to that other group of people and you can listen in on their conversation. The reason why you can do that is because all sound bits have always been in your head and - given the right clue - in this case your name, the Thalamus alerts your consciousness to this and allows you to switch your attention. But you can't consciously listen to several conversations at the same time, only hear them all.

Our everyday lives are governed by thousands and thousands of sets and schemes that allow us to function as human beings. There are - of course - also sets and schemes governing how we learn. These rules can change, they can adapt to new realities and experiences. The main consequence for learning is that as trainers we need to understand how those rules work and how to use them to our advantage.

The important thing here is to be able to "hook" the new information to something existing. That is what I call to use "Experience". All new learning has to be based on existing experiences, something that we can relate to and build upon. Our brain is filled with bioelectrical connections and learning is nothing else but the creation of new neural pathways, new connections between nerves. It's kind of like the Internet, the more links, the easier to find information and - in the case of the brain - to store the information, since the neural pathways and their synapses (that is what we call the physical links between nerve cells) also function as "anchors".

The lecture also mentions this and I use my own learning model "HERMES" to illustrate the point. HERMES helps us in understanding and structuring content so that the student walks away from the class with a maximum understanding of the new subject. The slides covering "memory" are talking about what processes are at work that causes us to forget things we've learned.

We've covered one of the "E's" in HERMES, so let's look at the rest of the letters. The first one is really important. To take a holistic approach to learning is absolutely crucial. And if you don't like holistic, call it "Helicopter". A Helicopter is a good metaphor for what I mean. We need to give an overview, a fly over, of the topic before we dive into the subject. If the students don't see how things are connected, they are more likely to forget because they don't see the dots connecting different parts of your lessons. Some call it a red thread. Whatever the label, don't forget it. Let me give you

an example. Remember school? First grade? Fifty nifty United States from 13 original colonies? Have you had to learn that little song? How did your teacher teach you the geography of the US (or any other country for that matter)?

Oddly, in my geography classes, maps were seldom used, other than empty ones where we had to mark the names of rivers or lakes, cities and mountains. On the other hand, we had to memorize lists of cities, rivers and so on. It reminds me of the old song about the 50 US States. Not surprisingly, when we were asked to mention the number of US States during my high school senior year, only two kids in my class knew the correct answer. The rest was spread out between 13 and 52. To give a good overview in geography, names are not the quintessential thing; the interesting things are to see where the rivers run and where humans have built their settlements, as - strangely enough - there are similarities. My point is, seeing and understanding the bigger picture helps students structure and remember what they learn much better than if they have to fumble in the dark trying to make sense of bits and pieces that do not seem to have a real connection.

“R” stands for relevance and to us that is also a very important concept. I’m sure you often tune into a radio station called WII FM aka “What’s In It For Me”. Students will need to understand how the concepts they are learning about apply to them, the value they get from learning. Say you teach them the use of dynamic blocks, you need to be able to show them how much time they save and how much easier it is to work with dynamic blocks. “M” stands for meaning and is related to relevance. If you are teaching AutoCAD to an architect and you use mechanical or generic examples that might not have any meaning to the architect. So whatever examples you use, they have to be meaningful for the students or they will not learn from them. So in our example with dynamic blocks for the architect, don’t use cylinders on an engine, but windows or chairs. On the other hand, chairs and tables won’t do it for a civil engineer and if you have people from several trades in your class (I’m told this happens every now and then...), be prepared with examples that suit each of the trades in your class. More work, but your evaluations and the students’ learning results will reward you for that extra work.

The second “E” stands for easy and though it seems logical enough, we trainers are often overcomplicating things, starting to teach bottom up rather than giving an overview first. Keep it simple and your students will learn more easily. Besides, keeping it simple doesn’t mean that you cannot convey complex subjects. Last not least, “S” stands for sense. Make sure that what you teach makes sense to your students. I really recommend that you look through your notes, course materials and slides from each of the perspectives to see if they are making sense. Are you showing them the big picture, are you tapping into the students’ experiences, are you working with relevant examples, are you giving meaning to the content from a student perspective (not yours!), are you keeping it simple? Does it all tie up? Does it make sense? Once you’ve got it all neatly packaged, that’s when you’ll see that teaching will be so much easier.

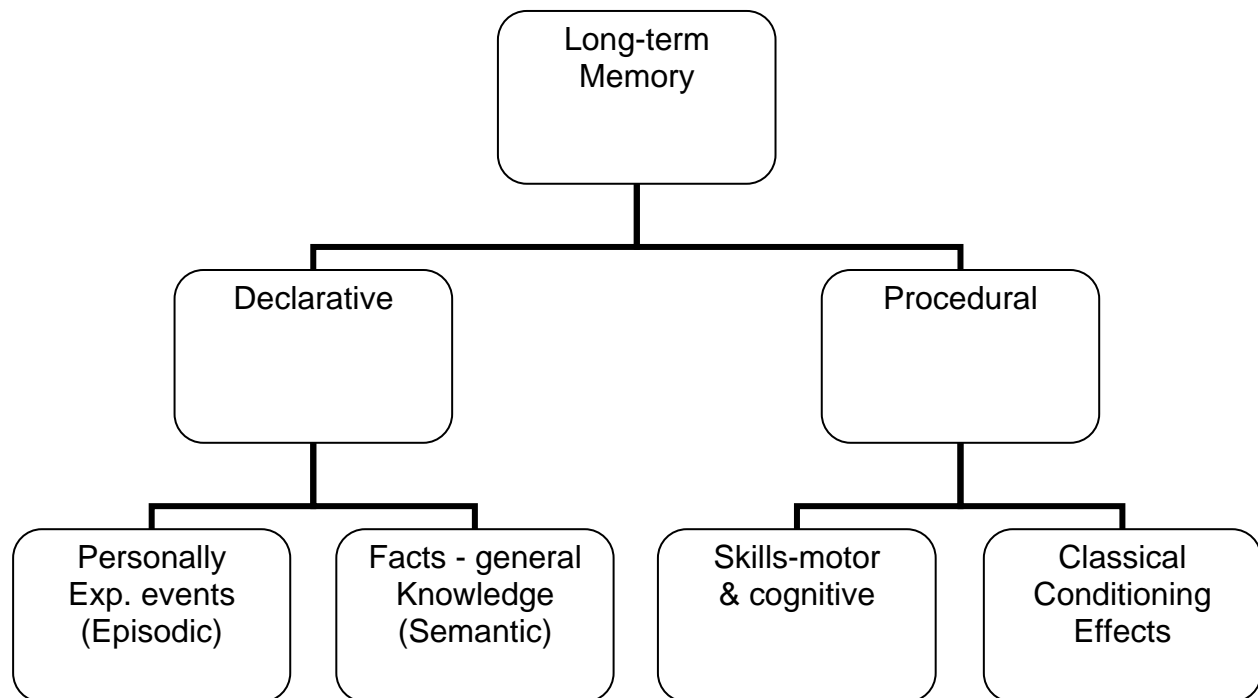
Now that is only a fraction of what learning is all about. I’d be more than willing to show you more, but there just isn’t the time to do this here.

b. Memory

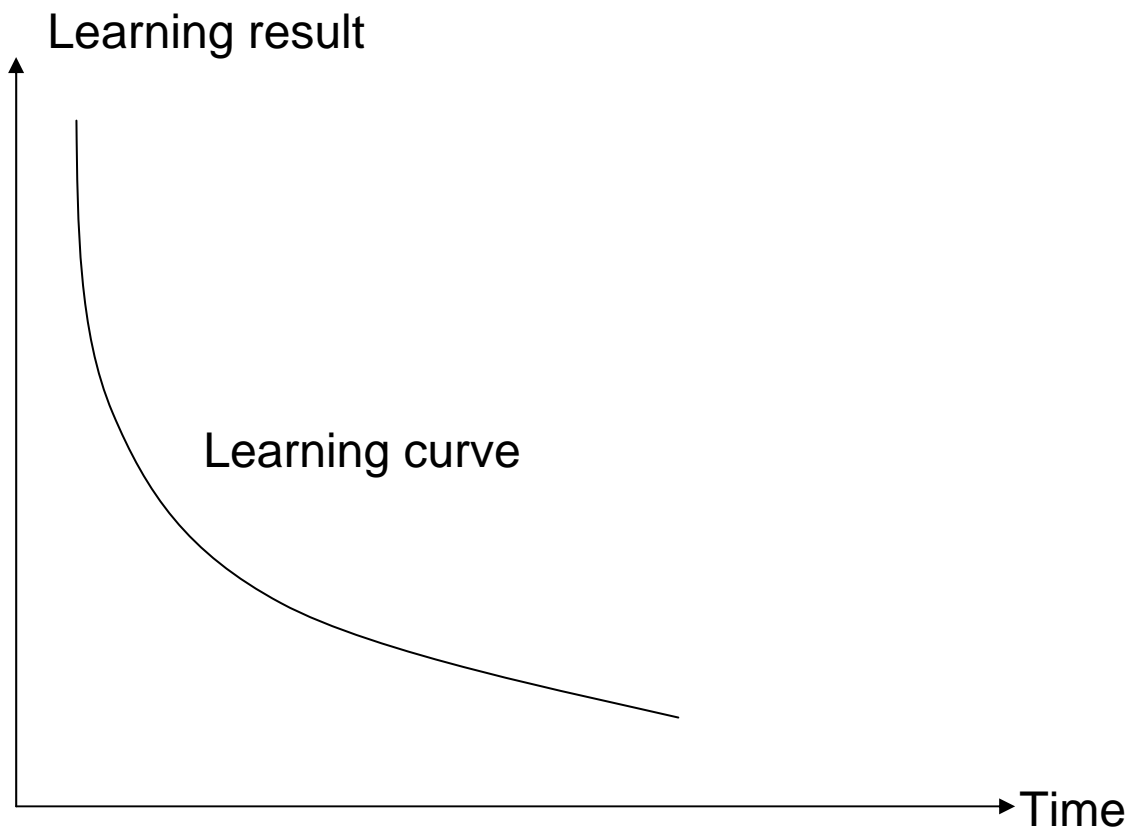
So far we’ve only covered how data reaches your brain and in my lecture I show a “hairy” example of how that works. Unfortunately there are a million things that can go wrong and as I’m sure you know from working with a computer, memory and storage is one of the issues we face. HERMES will help us to store what we learn so that we can find it again, because, and that is where we function differently to a computer, we don’t have search capabilities like Windows. I can’t just look for any file with the word “3ds max” and get a neat list of all files containing that word from my brain. It doesn’t work that way. Instead, our brain is more like a relationship database with links and the more links to what I’m looking for, the easier I find it again.

If we do not adhere to HERMES, there is a good chance that what we learn will be stored in our short term or working memory and discarded after a while. Memory researchers are not in agreement as to how long we can store “stuff” in our short term memory. Some claim up to 20 seconds, others talk about days. I sometimes feel that I have no such memory at all...

In brief, memories are nothing else but neural pathways, links (synapses) between different brain cells. The more the better. And to form new synapses we need something to attach to, and that is where the experience piece from HERMES comes in. There are different kinds of memories and depending on what book you read they will be called differently. Parts of your memory deal with your personal history, things you've experienced (episodic memory), e.g. your wedding or graduation memories. Then we have memories that relate to facts, aka semantic memories (or Jeopardy memory). But memory also stores all the sets and schemes, rules etc. you live by. That is called Procedural memory and includes two kinds of memories. On one hand all the skills and motor (body movements) related memories along with your cognitive memories (how you think) and on the other side there is also some room for classical conditioning effects (you might have heard of Pavlov's dogs?). Humans, too, can be conditioned, even though there are ethical questions to be considered.

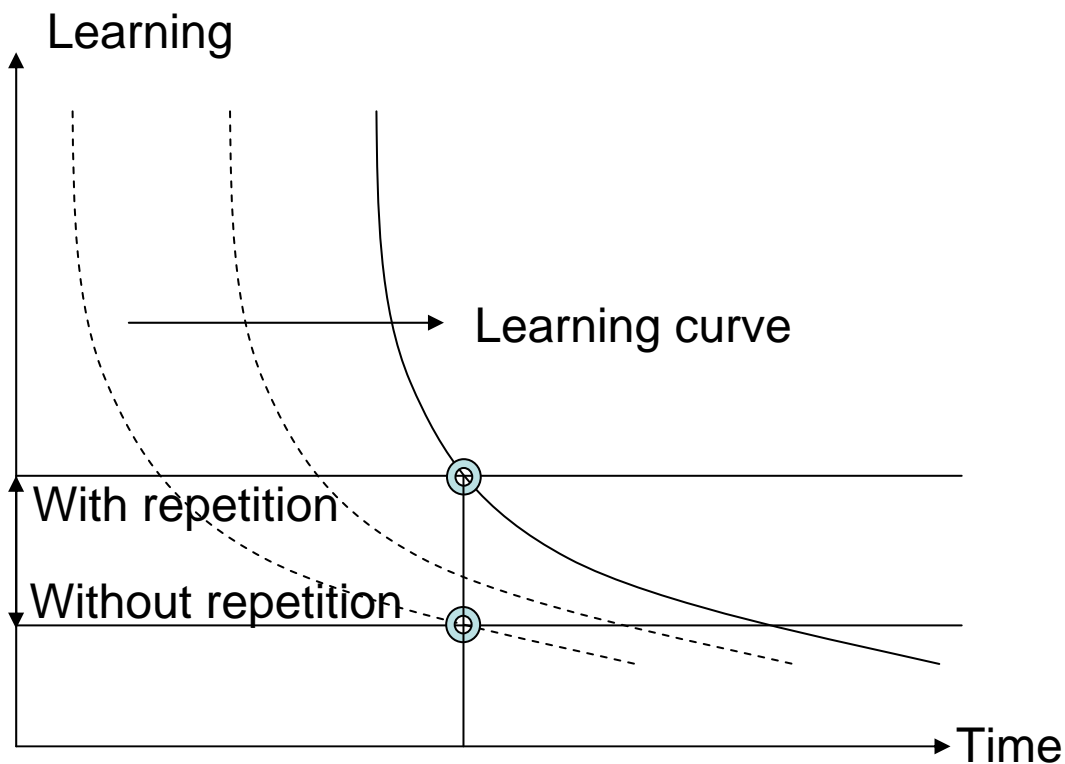


The lesson here is to make sure that you help your students to store what they learn. Research shows that in average, using traditional methods of teaching, up to 80% of the matter taught is lost within 6 months of the class.



Repeating and the ability to actually put what we've learned to immediate use allow us to significantly improve that figure. The learning curve is something every teacher should be familiar with. Using HERMES we can help our students to create strong neural pathways. What you want to achieve is a move of the learning curve to the right. Repetition and the ability to put to use what you've learned will achieve that, as you can see from the next graph.

With "use" I'm most certainly referring to HERMES, but also to the student's ability to actually use what he/she learned after the class. And that is something which we can't always control as teachers. As most of us work with software, the least we can do is to provide the students with additional learning materials, maybe a learning license, exercises and work books, so that those students who do not have the possibility to go home and use their skills at work have a fair chance of retaining their knowledge and deepen it.



c. Communication

One of the things we often tend to forget in our dealings with our students is the impact of communication. It's a powerful tool if you use it to your advantage. Being aware of its limitations helps you to be prepared and to avoid misunderstandings.

The one thing I always find fascinating in my classes is how difficult it is to get a message across "unadulterated". The core message of your presentation or your class is absolutely crucial and you should - as trainer - be able to present the core message in a word or a sentence. In a course you will of course have many messages as you work your way through the subject, but nevertheless, you need to know what your message is. If you don't know, how do you expect your students to get it? Have you ever tried the phone chain? You whisper a sentence in someone's ears, who then passes that message on to the next person and so on. You'll be surprised to see how quickly it changes and in the end, something completely different will be said. This is to be expected and there are many different explanations for it.

One of the key factors that influence our communication is the difficulty we have transforming thought to spoken word. A thought may be perfectly clear in my mind, but speaking that same thought can prove to be very difficult. Research shows that up to 80% of the content of a message may be lost in a process where a language switch is involved (which of course isn't always the case). But strong dialects, speech and hearing problems may also contribute to loss of information. Fact is that we rely much more on non-verbal communication than what is said. If you shake your head while telling a positive story, no one will believe you (e.g. You state loud and clear how much you love to go to the amusement park with your kids, while your whole body says no, your audience will 'listen' to your body, not to you). Communication is a huge topic, worth a book or two. Unfortunately the time allocated doesn't allow for an in detail analysis of all its intricacies.

My best tip here is to really be mindful of the message. Know what you wish to say and make sure to get confirmation from your participants.

d. Learning Styles

Different people prefer to learn in different ways, some like to study their books alone, some like to act things out in groups, some like to sit back and watch others and some like to do a bit of each. In this hand-out you will also find a version of David Kolb's test (pages 16f). Please feel free to take it. Simply follow the instructions and you will be fine. If you plan to use this test on your students, please make sure to tell them that the test is not about what is right and what is wrong, that each learning style is as good as the other and that in effect, we all use parts of all styles (the trapezoid created by drawing lines between the four point on the axes will show you just how much of each of the four archetypes you are). Kolb's test is also available on the Internet today in a more developed and fine-tuned version than what is sensible for use on paper. You'll easily find it if you Google for "learning style & Kolb".

David Kolb developed his learning styles model in 1984. He's far from being the only one as you'll see further on, but I do like his approach because it makes sense and because my students and fellow teachers always have been able to recognize themselves. Also, the test results have always been consistent with his predictions. The theory sets out these four preferences for learning:

- **doing** (active experimentation)
- **watching** (reflective observation)
- **feeling** (concrete experience)
- **thinking** (abstract conceptualization)

The combination of where our preference for learning lies produces four possible learning style types:

- **activist** (doing and feeling preferences, or concrete-active)
- **reflector** (watching and feeling, or concrete-reflective)
- **theorist** (watching and thinking, or abstract-reflective)
- **pragmatist** (thinking and doing, or abstract-active)

Knowing your own learning style will make you aware of your teaching preferences (we teach the way we'd like to learn) and knowing how your students learn will make you sensitive to their needs. That said, everyone responds to and needs the stimulus of all types of learning style - it's a matter of using emphasis that fits best with a person's learning style preferences:

Reflector

Reflectors like to stand back to ponder experiences and observe them from many different perspectives. They collect data, both first hand and from others, and prefer to think about it thoroughly before coming to any conclusion. The thorough collection and analysis of data about experiences and events is what counts so they tend to postpone reaching definitive conclusions for as long as possible. Their philosophy is to be cautious. They are thoughtful people who like to consider all possible angles and implications before making their own points. They tend to adopt a low profile and have a slightly distant, tolerant unruffled air about them. When they act it is part of a wide picture which includes the past as well as the present and others' observations as well as their own. The Reflector has the following strengths:

- Careful
- Thorough and methodical
- Thoughtful
- Good at listening to others and assimilating information
- Rarely jump to conclusions

The Reflector has the following weaknesses:

- Tendency to hold back from direct participation
- Slow to make up their minds and reach a decision
- Tendency to be too cautious and not take enough risks
- Not assertive - they aren't particularly forthcoming and have no "small talk"

Theorist

Theorists (adapt and integrate observations into complex but logically sound theories. They think problems through in a vertical, step by step logical way. They assimilate disparate facts into coherent theories. They tend to be perfectionists who won't rest easy until things are tidy and fit into a rational scheme. They like to analyze and synthesize. They are keen on basic assumptions, principles, theories, models and systems thinking. Their philosophy prizes rationality and logic. "If it's logical, it's good". Questions they frequently ask are "Does it make sense?" "How does this fit with that?" "What are the basic assumptions?" They tend to be detached, analytical and dedicated to rational objectivity rather than anything subjective or ambiguous. Their approach to problems is consistently logical. This is their "mental set" and they rigidly reject anything that doesn't fit with it. They prefer to maximize certainty and feel uncomfortable with subjective judgments, lateral thinking and anything flippant. The Theorist has the following strengths:

- Logical "vertical" thinkers
- Rational and objective
- Good at asking probing questions
- Disciplined approach

The Theorist has the following weaknesses:

- Restricted in lateral thinking
- Low tolerance for uncertainty, disorder and ambiguity
- Intolerant of anything subjective or intuitive.
- Full of "shoulds, oughts and musts"

Pragmatists

Pragmatists are keen on trying out ideas, theories and techniques to see if they work in practice. They positively search out new ideas and take the first opportunity to experiment with applications. They are the sort of people who return from management courses brimming with new ideas that they want to try out in practice. They like to get on with things and act quickly and confidently on ideas that attract them. They tend to be impatient with ruminating and open-ended discussions. They are essentially practical, down to earth people who like making practical decisions and solving problems. They respond to problems and opportunities "as a challenge". Their philosophy is "There is always a better way" and "If it works, it's good".



The Pragmatist has the following strengths:

- Keen to test things out in practice
- Practical, down to earth, realistic
- Businesslike - gets straight to the point
- Technique oriented

The Pragmatist has the following weaknesses:

- Tendency to reject anything without an obvious application
- Not very interested in theory or basic principles
- Tendency to seize on the first expedient solution to a problem
- Impatient with small talk
- On balance, task oriented, not people oriented

Activist

Activists involve themselves fully and without bias in new experiences. They enjoy the "here and now" and are happy to be dominated by immediate experiences. They are open-minded, not skeptical, and this tends to make them enthusiastic about anything new. Their philosophy is "I'll try anything once". They tend to act first and consider the consequences afterwards. Their days are filled with activity. They tackle problems by brainstorming. As soon as the excitement from one activity has died down they are busy looking for the next. They tend to thrive on the challenge of new experiences but are bored with implementation and longer term consolidation. They are gregarious people constantly involving themselves with others but, in doing so they seek to centre all activities on themselves. The Activist has the following strengths:

- Flexible and open minded
- Happy to have a go
- Happy to be exposed to new situations
- Optimistic about anything new and therefore unlikely to resist change

The Activist has the following weaknesses:

- Tendency to take the immediately obvious action without thinking
- Often take unnecessary risks
- Tendency to do too much themselves and hog the limelight
- Rush into action without sufficient preparation
- Get bored with implementation/consolidation

Another way of categorizing learning styles is by splitting them into **visual, auditory and kinesthetic**. For some, auditory input is most valuable; others rely upon a visual style and others learn through kinesthetic means, or a combination of the three. Every person has one primary learning mode. Once you identify that mode, you can learn to maximize it and enhance your education.

Auditory learners:

Auditory learners tend to benefit most from traditional teaching techniques. Many teachers use a lecture-style forum, presenting information by talking to their students. Regulating voice tone, inflection, and body language will help all students maintain interest and attention. Auditory learners succeed when directions are read aloud, speeches are required, or information is presented and requested verbally.

Visual learners:

Some students rely upon a visual learning style: "Show me and I'll understand." Visual learners benefit from diagrams, charts, pictures, films, and written directions. These students will value to-do lists, assignment logs, and written notes. Many of these techniques, however, also benefit kinesthetic learners.

Kinesthetic learners:

Most of the school population excels through kinesthetic means: touching, feeling, experiencing the material at hand. Children enter nursery as kinesthetic and tactual learners, moving and touching everything as they learn. By primary school, some students have become visual learners. During secondary school some students, primarily females, become auditory learners. Yet, many adults, especially males, maintain kinesthetic and tactual strengths throughout their lives.

Because of the high numbers of kinesthetic learners, education is shifting toward a more hands-on approach; manipulatives and other "props" are incorporated into almost every school subject, from physical education to language arts. Hands-on teaching techniques are gaining recognition because they address the challenging needs of kinesthetic learners, as well as the diverse needs of auditory and visual learners.

Some people prefer to talk about **left brain and right brain** learning. However, I'd like to advice for caution here. I personally don't buy into this theory and find it psychologically unsound. As human beings we are obviously all (except if you are the victim of severe brain injuries) equipped with two functioning hemispheres who contribute more or less equally to how we function. And even though CAT scans reveal that different tasks are handled by different parts of the brain and can be allocated to a hemisphere, it should also be pointed out that our brain is extremely adaptable and that studies show that small children that suffered brain damage and where an entire hemisphere had to be removed would be able to fully recover and that the other brain-half did take over most of the functions of the other (missing) half. So please take the following with a pinch of salt!

Left brain learning

- be logical and organized
- work well when things are broken down into small, structured steps
- are good listeners
- are good with words
- enjoy reading
- enjoy writing
- give and follow directions and instructions
- organize others
- are good at checking their work
- are good at working to deadlines
- prefer to read the book before seeing the film

- are uncomfortable with open-ended, unstructured assignments

People who like to use the skills attributed to the left part of their brain are mostly logical thinkers who tend to be patient, methodical and plan carefully. They generally do not get carried away by impulsive ideas but prefer to work out what they have to learn by breaking things down into fairly small structured steps. They like to see a job through from the beginning to the end. They are usually good at keeping to deadlines and have well developed organizational skills.

A left brained learner should listen to talks and lectures and read their course material making short, linear notes with bullet points to help them remember. Storing notes in a logical way, e.g. a card index box/personal dictionary/indexed file, will suit the left brained person.

Right brain learners

- are very intuitive and 'guess' solutions
- are imaginative and even fantasy orientated
- prefer to see the 'whole picture' before working on a project/topic
- are very good with shapes and patterns - a 'hands-on' practical person
- are musical and/or artistic
- have good ideas
- are sensitive to color
- enjoy math/science
- prefer to learn by demonstration, pictures, videos, diagrams, computers etc.
- find deadlines difficult to meet
- appear disorganized
- prefer to see the film before reading the book
- prefer to select own assignments that involve creativity

People who like to use the skills attributed to the right part of their brain are often guided by their feelings and prefer learning when they are given the whole picture of a task ahead, rather than small parts of it. Right brained learners are often imaginative, creative and skilled in spatial tasks, e.g. putting things together from parts. They are often the people with good ideas but are not always as interested in the details and careful planning and organization needed to see them through. Right brained learners tend to learn best by seeing pictures and images and often do not like working within tight time constraints.

A right brained learner will learn best if talks and lectures are illustrated with slides, videos, graphs, pictures etc. and if they use similar things in their own work. Mind mapping using color and pictures, flow charts, spider-grams and color-coded index boxes or files are an easier way for the right brained person to record, plan and store information.

Equally left/right balanced learners

Learners who use a 'whole brain' approach to their work are probably able to work the most effectively. They can be creative, expressive and imaginative with good spatial skills, e.g. putting things together from their parts, and they also realize that to make ideas work, structure, planning and organizational skills are needed.

Equally balanced right/left brained learners still like to know the whole picture of the task before them but appreciate the need to break the task down into manageable parts and complete it within a time scale.

These learners should work well in a team because they have the flexibility required to adapt to new working patterns and new ideas. However, they do need to be careful of becoming indecisive in their efforts to always 'see' the other point of view!

In closing...

Please allow me to give you a couple of tips along on your continued journey as teacher/trainer:

- Be mindful of your students. Try to find out as much as you can (even if you can't do a learning profile with them). Engage them and find out what makes them 'tick'. Understanding your students' motivation enables you to use it to fuel their curiosity and ultimately increase their learning results.
- Ask yourself about the goal of your class. What is it you want to convey? What is/are the goal(s)? You can inform, increase awareness or get people to change their behavior. Know what it is you wish to achieve and build your class around that.
- Adapt your class around the different learning styles (no matter which approach you prefer), just remember that different people have different preferences and that not all work like you
- Take HERMES to heart, use a holistic approach, build on your student's experiences, show them how they'll be able to use what they learn in real life to motivate their learning, use meaningful examples, keep it simple and make sure that what you teach makes sense!

You have my e-mail address on the front cover of this hand-out. Do not hesitate to contact me if you have questions about the lecture, this hand-out or if you would like to take things a step further.

Thank you!

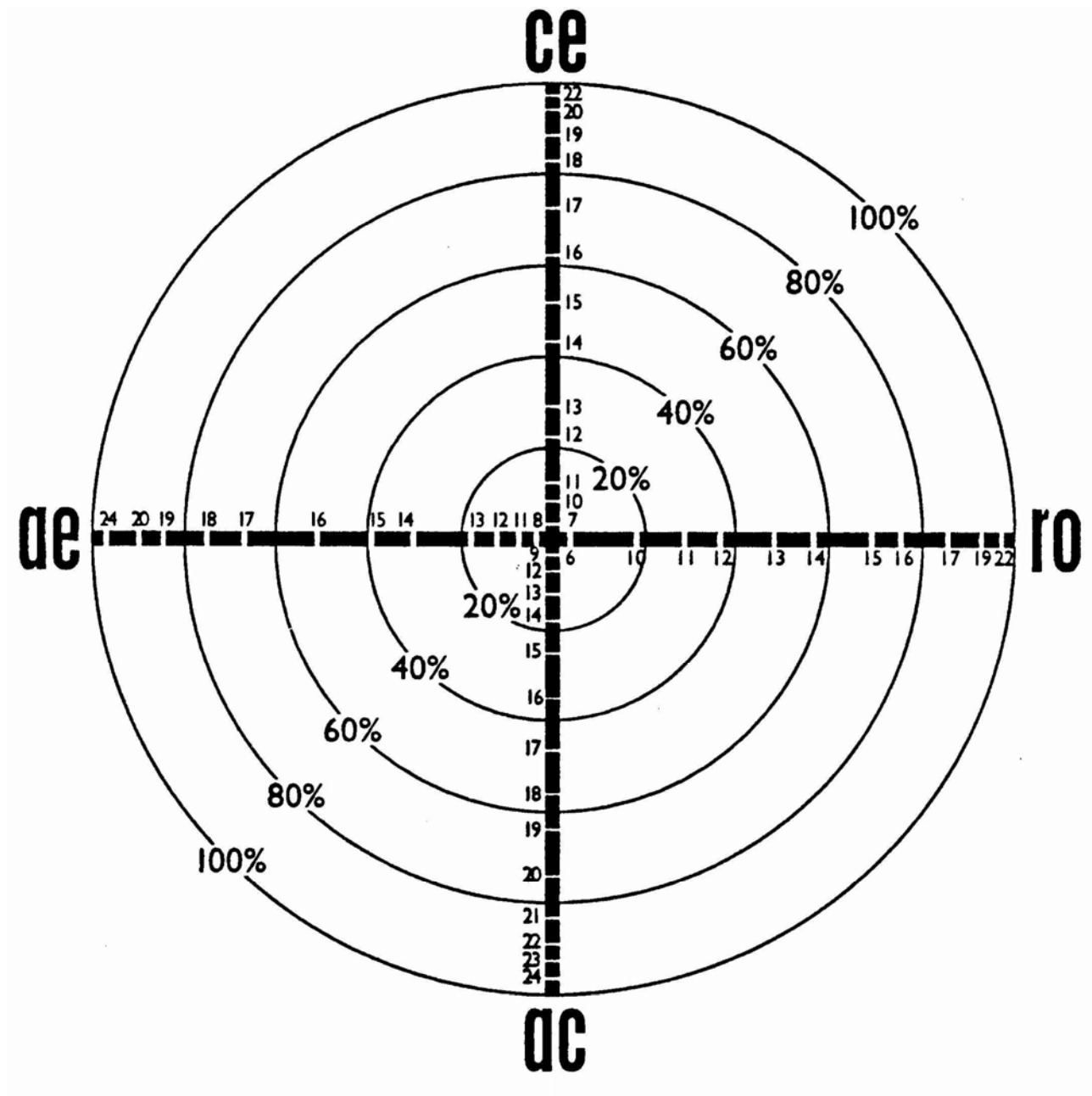
Hans



Learning Style Profile & Inventory

(Based on David Kolb's work)

Name: _____



Instructions

Below you'll find nine rows with four words each. Please rank the words in every row, by putting a 4 next to the word that you spontaneously think best describes you, a 3 next to the second best word etc.

Please remember: NO answer is "right" or "wrong". Every combination is absolutely okay! The idea of this test is to describe how you prefer to learn (or learn best), not to test your capacity for learning.

	CE	RO	AC	AE
1	Argumentative	Cautious	Topic-related	Practical
2	Receptive	Relevant	Analytic	Impartial
3	Feeling	Observing	Thinker	Doer
4	Accepting	Risk taker	Judging	Conscious
5	Intuitive	Productive	Logical	Questioning
6	Abstract	Observant	Concrete	Active
7	Now-focused	Reflective	Future-focused	Pragmatic
8	Experience	Observation	Structuring	Experimental
9	Intensive	Reserved	Rational	Responsible

Score:

The four columns above correspond to the four axes in your learning style circle: CE, RO, AC and AE. In order to calculate your score, you need to enter the numbers assigned above into the appropriate spaces below:

1) Enter score:

<p>CE</p> <p>2 3 4 5 7 8</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>	<p>RO</p> <p>1 3 6 7 8 9</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
<p>AC</p> <p>2 3 4 5 8 9</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>	<p>AE</p> <p>1 3 6 7 8 9</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>

2) Compute Sums: CE = _____ RO = _____ AC = _____ AE = _____

Use your results above and mark the dots on the respective axes in the diagram: Connect the four dots with lines and the result is a trapezoid that consists of four differently shaped triangles. The triangle with the biggest area corresponds to your preferred learning style.

CE = Concrete Experiences (feeling)

RO = Reflective Observations (watching)

AC = Abstract Conceptualization (thinking)

AE = Active Experimenting (doing)