

## The myth of the learning style

### *A brief survey of learning styles*

Type 'learning style test' into Google and you will get "About 76,100,000" results. Impressive, eh? Learning style theories have been around for decades and there are now around 70 different categorisations of learning styles although

*It is important to note that the field of learning styles research as a whole is characterised by a very large number of small-scale applications of particular models to small samples of students in specific contexts.<sup>1</sup>*

In other words, the results of many of the studies of learning styles are not guaranteed to be generalisable or transferable between settings.

Where does such a range of learning style classifications come from?

Well, many origins can be very roughly classified as follows:

1. Belief that our particular learning style is part of our (variably fixed and unchangeable) constitution (a group including the hugely influential VARK theory)
2. Belief that our learning style is the result of the cognitive structure of our brains (including the equally influential multiple-intelligence theories of Gardner *et al*)
3. Belief that our learning style is part of our flexible learning preferences (including the popular Honey and Mumford divisions)

The title of this little article may have alerted you to the fact that it is not going to be very sympathetic to any of the theories. Here are some points of view for you to evaluate.

either...	or...
<i>Are you a visual, auditory or kinesthetic learner. Learning Styles affect everything you do, how you think, your work, and even your relationships<sup>2</sup> (punctuation as in the original)</i>	<i>... learning styles theories are not accurate representations of how children learn. Although they are certainly not guaranteed to lead to bad practice, using them as a guide is more likely to degrade practice than improve it.<sup>3</sup></i>
<i>Identifying your students as visual, auditory, reading/writing or kinesthetic learners, and aligning your overall curriculum with these learning styles, will prove to be beneficial for your entire classroom<sup>4</sup></i>	<i>the idea of children having different learning styles is based on "neuro-babble and phoney science"<sup>5</sup></i>
<i>Understanding your particular learning style and how to best meet the needs of that learning style is essential to performing better in the classroom<sup>6</sup></i>	<i>There is no scientific evidence that children do indeed acquire information more effectively if it is presented to them in their preferred learning style<sup>7</sup></i>

Learning style advice in handbooks and for teachers is often accompanied by pretty graphics explaining what the theory involves (which will help only visual learners, of course) although, as the citations on the left above will show you, the term *theory* is rarely applied. The learning styles are simply presented as facts. Here are three popular ones and one slight mishmash.

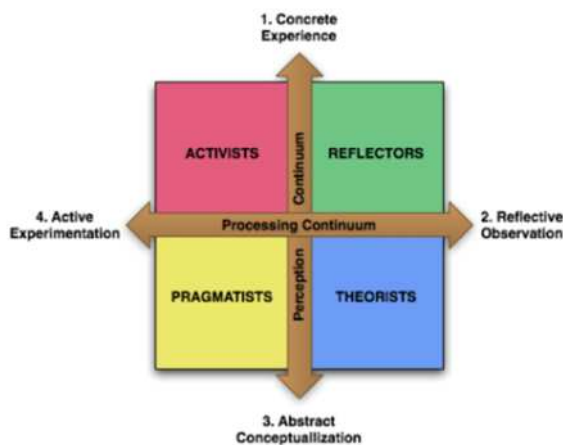
VARK<sup>8</sup>

<b>Visual</b> • Visual learners prefer the use of images, maps, and graphic organizers to access and understand new information.	<b>Auditory</b> • Auditory learners best understand new content through listening and speaking in situations such as lectures and group discussions. Aural learners use repetition as a study technique and benefit from the use of mnemonic devices.
<b>Read &amp; Write</b> • Students with a strong reading/writing preference learn best through words. These students may present themselves as copious note takers or avid readers, and are able to translate abstract concepts into words and essays.	<b>Kinesthetic</b> • Students who are kinesthetic learners best understand information through tactile representations of information. These students are hands-on learners and learn best through figuring things out by hand (i.e. understanding how a clock works by putting one together.)

MULTIPLE INTELLIGENCES<sup>9</sup>



HONEY-MUMFORD<sup>10</sup>



BASED ON MULTIPLE INTELLIGENCES<sup>11</sup>

# Learning Styles

<b>Visual</b>  * You prefer using pictures, images, and spatial understanding.	<b>Musical/Auditory</b>  * You prefer using sound and music.	<b>Verbal</b>  * You prefer using words, both in speech and writing.	<b>Physical/Kinesthetic</b>  * You prefer using your body, hands and sense of touch.
<b>Logical/Mathematical</b>  * You prefer using logic, reasoning and systems.	<b>Social</b>  * You prefer to learn in groups or with other people.	<b>Solitary</b>  * You prefer to work alone and use self-study.	<b>What is your learning style?</b>

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If you would like to test yourself and discover your preferred learning style, go online and take any of the millions of mini-tests you will find there. Then ask yourself if the test told you anything

- a) new
- b) useful

The underlying implication of learning style theory is that once we have established the dominant learning style of the student(s) we can teach in a way that meshes with it and thus enhance the learning experience and success. For a comment on that, see Problem 6, below.

### Learning styles in teacher training

An interesting survey of the influences of learning styles theory has been conducted and the findings reported (Lethaby & Harries, 2016<sup>12</sup>). They discovered that learning styles theory is deeply embedded in many teacher-training courses in ELT and that its influence is widespread. Teachers who have been told that learning styles are a fact and that they influence the way we present and the way material is accessed are still making a conscious effort, years after their training, to apply learning styles theory to the classroom. In particular, they discovered that nearly 90% of the teachers they surveyed had been strongly influenced by VARK theory.

For example evidence of how deeply embedded in training materials the issues of learning styles are, see Spratt, Pulverness & Williams (2011:72<sup>13</sup>). In that publication a section is devoted to learning styles, which contains the following breath-taking claim (emphases added):

*Learning styles are the ways in which a learner **naturally** prefers to take in, process and remember information and skills. Our learning style influences how we like to learn and **how we learn best**. **Experts** have suggested several different ways of classifying learning styles. They relate to the physical sense we prefer to use to learn, our way of interacting with other people and **our style of thinking**.*

There follows a list of these nine so-called learning styles taken from various sources (and unreferenced to them): visual, auditor, kinaesthetic, group, individual, reflective, impulsive, analytic, autonomous. Each is glossed in terms of ‘learns best by ...’.

They go on (emphases added):

*You can see from these descriptions how learners with different learning styles learn in different ways, and **need to be taught in different ways**. We must remember, though, that learners **may** not fall exactly into any one category of learning style as they may have several styles. It's also **true** that different cultures may use some learning styles more than others and that learners may change or develop their learning styles.*

Note in the two citations above how it is suggested by nameless ‘experts’ that learning style theory is fact rather than fiction.

As a follow-up activity, the reader is asked (*op cit*:76) to match a set of classroom activities with “*the learning styles they are most suitable for*”, neatly perpetuating the idea that we need to match classroom activities to people’s learning styles if they are to be effective. See problems 1, 3 and 6, below. On the following page, described slightly alarmingly as a ‘Discovery activity’, the trainee teacher is asked to:

*Observe two of your learners next week and work out which learning style(s) they have. Write a description of their learning style(s) and put it in your Teacher Portfolio.*

As practice for the examination in the same unit, we find:

*Choose the activity (A, B or C) which matches the characteristic.*

1. *These learners are mainly kinaesthetic.*

A *The learners in groups tell a story based on a series of pictures they look at.*

B *The learners go round the class reading posters made by the other groups.*

C *The learners listen to a recording about an athlete and fill in a table.*

It is worth noting that this is the handbook recommended to people taking the prestigious Cambridge Teaching Knowledge Test by the University of Cambridge. The book is published “*in collaboration with Cambridge ESOL*” (front cover) who presumably, therefore, approve of its content. In fact, in the glossary of terms for that examination supplied by Cambridge, we find that *learning style* is defined as “*The way in which an individual learner naturally prefers to learn something*<sup>14</sup>” without any hint that learning style theory is even slightly controversial.

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## *So what is the problem?*

There are those who consider that the application of learning style theory to our classrooms is a positive thing and those who consider it a harmless hobby akin to using alternative medical treatment. This article hopes to convince you otherwise.

### **Problem 1**

If you were teaching geometrical shapes and the words that describe them, what format would you use? It seems obvious that most people would actually have a diagram showing the shape but that would mean that the lesson would only appeal to visual learners

(whatever they are). If you have a class of auditory learners, what do you do then; describe the shapes?

Problem: learning styles are not a universal – it depends **what** you are teaching. Learning styles theorists conventionally and routinely ignore the content of the teaching.

#### **Problem 2**

We know too little about how the brain actually processes information. If there are 70-odd different ways of classifying learning styles, that implies there are 70-odd different theories about how the brain operates.

Problem: we cannot show that there is any sound neurological evidence to support learning style theories.

#### **Problem 3**

Although practitioners are advised to match the instruction style to the learning style, that just will not work in practice. Even if we only had, say, 10 or so classifications of learning style to consider, that would mean designing teaching and testing materials 10 different ways for everything we teach.

To make matters worse, there is some evidence that deliberately mismatching learning style with methodology can be *more* effective because it shakes the learners out of their comfort zone.

Problem: we cannot put it into practice, even if we wanted to.

#### **Problem 4**

Too many other factors are at work. If you take a learning styles questionnaire (pick one from 70), it is a simple matter to manipulate your answers to discover that you are any of the various kinds of learner in any proportions. Making matters even muddier is the fact that, of course, all sorts of cultural and personality effects are in play.

Problem: we cannot measure learning styles with any kind of accuracy.

#### **Problem 5**

The lack of evidence that any of the current plethora of theories is likely to be correct makes the situation worse. Which one do you pick and why?

Problem: we cannot choose between the competing theories in any principled or satisfactory way.

#### **Problem 6**

Following on from Problem 4 is the uncomfortable evidence that matching teaching approach and materials to learning style(s) is, in fact, probably a waste of time. The Coffield *et al* report puts it this way:

*One of the most popular recommendations is that the learning styles of students should be linked to the teaching style of their tutor, the so-called 'matching hypothesis'. Much has been written on this topic by learning styles theorists as diverse as Riding, Dunn, Gregorc, Witkin and Myers-Briggs, but the evidence from the empirical studies is equivocal at best and deeply contradictory at worst.*<sup>15</sup>

Problem: despite the claims in, e.g., The TKT Course, that “*learners with different learning styles learn in different ways, and need to be taught in different ways*”, there is no proper evidence support such assertions.

#### **Problem 7**

Even if you know what your own learning style is, that probably will not help you be a better learner. Knowing, for example, that you are a visual learner will not help you to process a written text, no matter how many pretty images are associated with it. Nor will it help you understand a lecture on the radio.

Problem: learners need to attack tasks with appropriate learning strategies and cannot bend the task to match their learning style. They have to employ a learning style to match what they are learning.

### **Problem 8**

If I am convinced that I am a visual, pragmatic learner, and I come across a lesson topic which requires me to listen and reflect, there is a good chance that I will just shut down and not learn at all.

Equally, if a teacher is convinced that most of the class are audio-kinaesthetic learners he or she may decide that using visuals and texts is a waste of time and thus limit the learners' exposure to valuable input.

Reynolds<sup>16</sup> states that one implication of applying the learning style approach is troubling because:

*it acts directly by contributing the basic vocabulary of discrimination to the workplace through its incorporation into educational practice.*

It has been reported that some schools in the UK label their children (physically, with a badge) to show their preferred learning style. Many people are uneasy about that.

Problem: learning styles 'information' can be used to stereotype and limit.

### **Problem 9**

Because theories of learning style seem simple and intuitive, there is a common temptation across the literature, especially on the web, and among English language teachers, to over simplify in a truly counterproductive way. We get, therefore, statements referring to *kinesthetic learners* or *visual learners* or *pragmatists* or whatever which bear no relationship to what the original theorists were proposing – i.e., that we all exhibit mixes of styles.

Even Gardner, the founder of theories of multiple intelligences, has noted after a visit to Australia,

*I learned that an entire state had adapted an education programme based in part on MI theory ... The more I learned about this programme, the less comfortable I was. Much of it was a mishmash of practices – left brain and right brain contrasts, sensory learning styles, neurolinguistic programming and multiple intelligences approaches, all mixed with dazzling promiscuity.<sup>17</sup>*

Problem: a little knowledge is a dangerous thing.

### **Problem 10**

The other temptation is to do what Gardner was shocked to discover and mix up alternative theories as if they were all equally valid and equally applicable. Then you get people talking about the 'fact' that, e.g.:

*My class are visual learners who are reflectors with high musical intelligence and dominant right-brain thinkers.*

Problem: that truly is neuro-babble.

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## **Summary**

The same criticisms cannot be made of all learning-style theory, but there are commonalities:

1. There is no evidence to suggest that altering teaching to match supposed learner learning style has any positive effect
2. There is no sound neurolinguistic theory to back anything up
3. It is impossible to put into practice
4. If the theory you apply is wrong then many hours and much effort has been wasted

5. It stereotypes learners and contributes directly to discrimination on the grounds of difference
6. It is quite possibly detrimental

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### *If learning style theory is all stuff and nonsense, why is it so popular?*

Two theories:

1. It is lucrative.

*The commercial gains for creators of successful learning styles instruments are so large that critical engagement with the theoretical and empirical bases of their claims tends to be unwelcome.*

*A thriving commercial industry has also been built to offer advice to teachers, tutors and managers on learning styles, and much of it consists of inflated claims and sweeping conclusions which go beyond the current knowledge base and the specific recommendations of particular theorists.<sup>18</sup>*

2. It is superficially attractive. It would, indeed, be helpful if we had simple, reliable and measurable ways of finding out how our students learn. Unfortunately, we don't.

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### *So what is the alternative?*

Assuming, of course, that we need an alternative, one would be to approach the issue from a different angle. We could:

- a) Focus on the strategies to deploy when learning anything, so that the approach taken by the learner is not based on a mythological learner style but is consciously chosen to be appropriate to the learning target.
- b) Focus on the nature of what we are teaching and investigate the best way to teach it rather than being distracted by assumptions about our students which are probably false.

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### *Update*

Since this article was first written, more mythology debunking has taken place. In March 2017, 30 eminent academics including Stephen Pinker (Johnstone family professor of psychology, Harvard University), Dorothy Bishop (Professor of Developmental Neuropsychology at the University of Oxford) and Prof Uta Frith (Emeritus Professor, Wellcome Trust Centre for Neuroimaging, University College London) wrote a letter to The Guardian in which they said:

*there have been systematic studies of the effectiveness of learning styles that have consistently found either no evidence or very weak evidence to support the hypothesis that matching or "meshing" material in the appropriate format to an individual's learning style is selectively more effective for educational attainment. Students will improve if they think about how they learn but not because material is matched to their supposed learning style.<sup>19</sup>*

and they went on:

*These neuromyths may be ineffectual, but they are not low cost. We would submit that any activity that draws upon resources of time and money that could be better directed to evidence-based practices is costly and should be exposed and rejected. Such neuromyths create a false impression of individuals' abilities, leading to expectations and excuses that are detrimental to learning in general, which is a cost in the long term. (ibid)*

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