

# Debating Learning Styles

*Barbara Prashnig responds to recent research about learning styles, assessment instruments and the interpretation of these findings*

The research project '*Should we be using learning styles? What research has to say to practice*', commissioned by the Learning and Skills Research Council (LSDA), carried out by a team from Newcastle University and led by Professor Frank Coffield examined theories about learning styles and assessed some of the leading commercial products in this field.

The article *Researching learning styles* (Teaching Thinking, Spring 2004) describes the team's research strategies and their criteria for comparing assessment instruments. It explains learning styles, questions their use in a higher-educational setting and comes to the conclusion that: 'learning styles are at best, only one part of a series of essential and related elements of learning and thinking and at worst a red herring'.

In my capacity as founding director of the Creative Learning Company in Auckland, New Zealand, and responsible for training and research, I have worked with the learning styles concept with students of all age groups and thousands of educators in many countries for over 12 years. After my training in the US I developed several new and extended assessment instruments based on the Dunn & Dunn learning style model which are now available in six different languages and are being used all over the world. This work has given me the opportunity to explore the diversity concept in learning and allowed me to witness a multitude of situations in which a sound knowledge of learning styles has changed teaching strategies and student performance.

It is for these reasons that I have decided to respond to the team's research, their interpretations, conclusions and recommendations to educators. As a practitioner, corporate trainer and teacher trainer I need to clarify several aspects of this work to limit the potential damage such reports can do, particularly to educators who are desperately seeking to improve learning and teaching. My concerns can be grouped in seven categories:

## Objection one

*So called 'learning style' instruments investigated and chosen for comparison:* Although the impression is created that 'learning style' instruments have been chosen, several cannot be described as such because they assess motivation, personality traits or intelligence factors. Readers of these research results could expect to find compatible instruments being investigated and it is regrettable that no distinction has been made between these diverse instruments, many of which

have certainly not been created to assess learning styles (LS). This only adds to the confusion about style diversity and is neither helpful for classroom teachers nor for trainers who deal with learning in the work place.

Another troubling aspect of this research is the judgement made about 'self-report inventories' which are being described as 'not sampling the behaviour of learners but only their impressions of how they learn, impressions which may be inaccurate, self-deluding or influenced by what the respondent thinks the psychologist wants to hear.' This poses a serious problem because of the underlying assumption of the researchers that LS instruments have been created a) for psychological assessments, b) that learners don't know how they learn best and c) that learners give inaccurate impressions of their learning preferences.

These judgements disregard test construction of complex LS instruments which have built-in mechanisms to detect cheating and are able to identify areas of contradictions which show up as invalid results. Based on my many years of practical experience with one of the most intricate LS instruments, the LSA (Learning Style Analysis for junior, senior and adult students which was created in collaboration with Dr. Ken Dunn) I have to question all three of these assumptions.

- Valid and true 'learning style' instruments do not assess psychological traits or behaviours of students but reveal biological and conditioned style features
- Learners *do* know how they learn best, particularly when they have to learn something new and/or difficult, but many learners have simply never thought about minor things that might influence the learning process in a major way
- By responding to a detailed questionnaire learners become aware of their style features, something even very young students just know deep down, but generally nobody cares to ask them. In our New Zealand and international field studies we found that students give inaccurate or contradicting responses mainly when they are under pressure, undergo change, or are very flexible; but they always know their preferences and non-preferences, particularly in the biological areas of their learning style.

## Objection two

*Lack of definition of learning styles:* It is left to the reader of this research report to explain or ponder what 'learning styles' actually is because there is no definition offered and I can only assume that this has not been considered important. However, from some

examples given, it seems that there was confusion about what learning styles are and at what time during the learning process they become extremely important, contributing in a major way to success or failure, particularly in academic learning. To clarify this omission, here is a standard definition including one most important aspect: learning style is the way human beings take in *new* and/or *difficult* information, how they process, store and retrieve it. (In contrast, MI – Multiple Intelligences, Howard Gardner’s theoretical framework for intelligence – is *not* learning styles because it deals, simply put, with output of information, combined with skills, talent, and often a ‘gift’ in one or several areas of human achievement).

Learning preferences of students are most important in difficult learning situations and don’t need to be matched all the time, because there is also the very important factor of flexibility which is a strength in itself in adverse learning situations. In addition to that, motivation plays an important role and can override non-preferences, but generally only for a certain period of time. However, teachers of younger students need to be aware under which conditions and how they learn best; mature students can study more effectively by knowing their personal learning style.

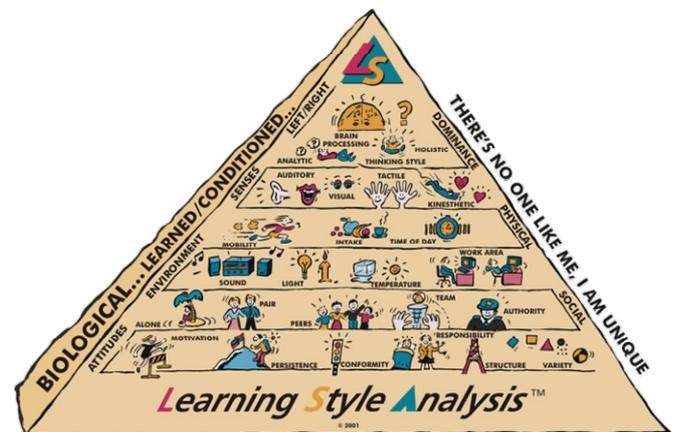
**Objection three**

*Over-simplification of complex style combinations:* Several examples are given (ie ‘identifying an individual as a kinaesthetic learner’ or ‘I can’t do that, I am a concrete learner’ or worse, ‘I learned that I was a low auditory, kinaesthetic learner. So there’s no point me reading a book or listening to anyone for more than a few minutes.’) which show the researchers’ lack of deeper understanding of the complexity of style features in every human being. It is easy to understand that models or instruments with only three categories (VAK) or four (pragmatist, theorist, activist or reflector) can never do justice to the complexity of learning needs in human beings when they are confronted with new and/or difficult information.

It is astonishing that the researchers concentrated on rather simplistic instruments, quoting examples which show that the complexity of learning styles has not been understood in its entirety. For unknown reasons, more complex instruments describing various aspects as sub-categories of an overall learning style were disregarded as were other most important components. These are environmental (need for sound/music, light, temperature, work area), physical (need for mobility, intake/chewing, time of day preferences) and social needs (with whom a student can learn best) among others.

It is undeniable that every human being has different preferences when taking in new and/or difficult information and that teaching becomes more effective and learning more successful, particularly when strong

needs are being matched during the learning process. The LSA Pyramid model below consists of 49 different elements and is the basis for one of the most complex and detailed LS instruments on the market, unfortunately not included in the research project. Compared to four-quadrant models, the multi-layered LSA model reveals intricate style combinations enhanced by degrees of needs ranging from strong preferences to flexibilities to non-preferences. Given those many style components in this particular model, it is not possible to label learners by just selecting one style feature as the predominant one. (See explanations under objection 4)



LSA pyramid model

**Objection four**

*Labelling of learners and using dichotomies:* I fully agree that many theorists and users of simplistic LS instruments tend to label learners, mainly according to their cognitive styles or sensory preferences; that is unacceptable because it can only lead to limitations and disregards human learning potential. It is regrettable that the researchers did not investigate two of the most complex LS instruments on the market – the Learning Style Analysis (LSA) and the Working Style Analysis (WSA) which my company has developed over the past ten years. They would have discovered that despite using some dichotomies as a useful broad distinction, labelling is not appropriate and therefore not used in our descriptions. The reason is, that due to the 49 elements in the LSA model and its nearly unlimited combination possibilities one cannot simply say: so-and-so is a ‘visual’ learner. That would be far too simplistic because this sensory modality in the LSA model consists of visual words (reading), visual external (seeing/watching) and visual internal (visualising/imagining); a distinction is also made between tactile (touching/manipulating) and kinesthetic external (experiencing/doing) and kinesthetic internal (feeling/intuition) as well as mobility (need for movement) which is a separate element altogether.

The only labelling I accept is the dichotomy between analytic and holistic overall style tendencies because

there are certain correlations between these style features. However, I always recommend describing these distinctions in terms of analytic and holistic *tendencies* only as stated in the LSA Report. The reason is that through research with the US Army we found out that under pressure human beings tend to use either a more analytic/logical or more holistic/impulsive approach for taking in new and difficult information or solving problems and their flexibilities disappear. Analytic and holistic tendencies in someone's learning style have an influence on most other style features in the LSA model because the strongest correlations always determine how a learner will approach new and/or difficult information intake.

### Objection five

*Misunderstandings and misrepresentation of LS on the continuum:* Putting LS instruments on a continuum from 'more fixed' to 'less fixed' is a useful way of comparing their qualities, but unfortunately a few errors have been made here. Firstly, Gardner's MI framework is not about learning styles (see explanation under objection 2 above) and it is certainly not fixed because intelligence factors develop over a lifetime, can be nurtured and enhanced.

Secondly, the first group of learning style instruments on the continuum has been placed under 'more fixed', described as 'largely constitutionally based' which is an indication that the most important aspects of LS have been disregarded, namely that:

- Learning styles change dramatically during primary school years (as research on the Dunn & Dunn model has shown and international field studies with our LSA instrument have revealed).
- A complex learning style profile consists of biological (more fixed) style components as well as learned or conditioned style features (less fixed, changing frequently during a lifetime).
- Even biological features change later in life due to the aging process although some style components remain fairly stable over a lifetime.
- Flexibilities must be considered as a vital aspect of LS but unfortunately they are not included in the simpler LS instruments. However, they constitute an important strength in itself because they allow learners to adjust to different, often adverse learning situations and conditions. Such a deep knowledge of style diversity is one of the most valuable tools to enhance learning and teaching.

### Objection six

*Confusion between learning styles, intelligence factors and personality traits:* One of the conclusions being drawn by the research team is that 'this field suffers from serious conceptual confusion and a lack of accumulated theoretical knowledge. It's deeply confusing even for psychologists attempting to make

sense of it.' And here lies exactly the problem: learning styles concepts and instruments have been created for educational practitioners to help them in their daily classroom work; not for psychologists to use them for probing deeper into the human psyche, not for business people to improve management strategies, and certainly not for academics, always on the lookout for disproving theoretically what works well in practice when it is used with common sense and genuine concern for the learner.

The confusion described in the field of theoretical knowledge has also obviously confused the research team because, in the selection of so called 'learning style' tests, an extremely wide range of different assessment instruments has been used, instruments which do not actually measure the same criteria and therefore cannot be compared accurately. In some cases it seems only parts of instruments have been investigated, described and compared, disregarding other vital components. It is peculiar to see that a 'Motivational Style Profiler' has been compared with the 'Myers Briggs Type Indicator' and both are being called 'learning style' instruments. The reported results based on this confusion are now confusing educators, many of whom are desperately looking for better methods to reach all students with their curriculum deliveries. It is a pity the academic researchers have not performed the more useful task of investigating on a larger scale how learning style applications based on complex but not complicated instruments actually work, how they do *not* label or limit learners, and how they are also being used successfully in higher education.

### Objection seven

*Advice given by theorists to classroom practitioners based on research on assessment instruments:* It is regrettable that the researchers have arrived at such a damning verdict, saying they 'found little good evidence to suggest that using a pedagogy influenced by the idea of learning styles, either directly or indirectly, has a significant effect on achievement of motivation' when countless teachers in many different countries have been and are using the LS approach very successfully and can give evidence to the contrary. I am currently writing my next book about applications of LS in different educational settings in different countries around the world, including reports and observations from practitioners as well as my own experiences with successful LS interventions and their encouraging, often astonishing results.

I fully agree that a cautionary note is appropriate when simplistic LS instruments label students and give either generalised or rather limiting advice and their use should not be recommended. However, appropriate assessment instruments raise awareness of style diversity in learners and learning style knowledge always changes teachers' attitudes towards their so called 'problem' students. Many times over the past ten

years I have seen that change of attitude which results in often small but significant changes in their teaching strategies and interactions with students. This awareness that comes with a deeper understanding of style diversity has to be based on theoretical frameworks and LS models but must go beyond theory which will always remain an empty shell without practical applications. The danger here is that all theoretical research and advice given by theorists most of the time does not enhance classroom practice because it is ... too theoretical.

### Summary

Whether assessment instruments are good or bad, reliable or non-valid, it remains a fact that every human being *has* a learning style which can consist of contradictory components, often leading to inner confusion and uneasiness. Style mismatches between teaching and learning, physical learning environments not conducive to information intake and unmet physical needs during the learning process can lead to frustration, stress, learning problems, underachievement, low self esteem, discipline problems among younger students, and dropoutism in high schools. Initial dislike for theoretical learning not based on style preferences, leads ultimately to the inability of achieving academically.

Even if educators don't accept that style diversity influences information intake and learning more than anything else, won't admit that learning diversity really exists and are convinced, if it does, it can be disregarded, students will always attempt to learn through their preferences. Despite the fact that students often have been heavily conditioned during their schooling years to learn according to general, traditional expectations in academic settings by listening, reading, discussing and writing, now enhanced through computer technology, they will revert to their personal preferences when learning is difficult for them.

Contrary to the description in the team's findings that an analysis of 30 inspection reports found no consistency on whether inspectors commended the use of learning styles they had identified as important, I have collected evidence from New Zealand, Australia and the UK that learning styles *do* make a difference to academic achievement and have often been reported as the single most impactful intervention a school could offer. Therefore the posed question: 'Should we be using learning styles?' can only be answered with a resounding "Yes!" because we have the evidence. Knowledge and application of the 'Diversity Concept' as I also call learning styles, is capable of raising the quality of teaching and learning, but most importantly, it gives hope and new learning abilities to students previously termed learning disabled and lost for academic and lifelong learning. The many successful practical applications of our LS instrument in

classrooms across the UK and around the world give it what could be called 'pragmatic validity'.

In conclusion it has to be said that self knowledge and understanding of learning styles is becoming more important in our 'knowledge economy', not only for developing greater flexibility in adverse learning situations but also for self-management in educational contexts and later in work situations.

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The Learning Style Analysis (LSA) and the Working Style Analysis (WSA) which CLC has developed over the past ten years are available through the NEP website [www.networkpress.co.uk](http://www.networkpress.co.uk) .

If readers are interested in carrying out research projects based on the LSA instruments, or want further information, please contact the author via E-mail: [barbara.prashnig@clc.co.nz](mailto:barbara.prashnig@clc.co.nz)