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Teacher Education and Trainee Learning Style

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Abstract ■ This article offers an overview of learning styles theories, selects seven to consider in more detail on the basis of recent research into validity and reliability, and synthesises these theories into a framework to aid task design in Teacher Education.

Keywords ■ Learning styles, task design framework, Teacher Education.

*Some one peculiar quality
Doth so possess a man that it doth draw
All his affects, his spirits, and his powers
In their confusions, all to run one way*

Ben Jonson

In this paper I will provide a brief overview of the learning styles field in order to raise some questions that must be answered if a learning styles approach is to be adopted. I will then analyse selected learning styles theories in order to suggest some answers to these questions in the light of recent research and in relation to Teacher Education. Finally I will suggest how a consideration of learning styles might inform and provide a framework for task design in Teacher Education.

Learning Styles: The Power of Four

The first problem that confronts anyone attempting to find their way through the literature on learning styles is the huge number of theories. A recent survey reports no less than seventy-one different theories (Coffield *et al.* 2004a, 2004b).



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Typically these learning style instruments consist of a bipolar scale with a single characteristic at either end, for example global–analytic. Some learning styles instruments consist of a single bipolar dimension (e.g. Allinson and Hayes' [1996] intuitive–analytic scale), while others consist of a multiplicity of characteristics and dimensions. Sternberg's (1999) model of mental government, for example, contains no less than thirteen thinking styles (legislative, executive, judicial, monarchic, hierarchic, oligarchic, anarchic, global, local, internal, external, conservative and liberal).

A large number of theorists construct a two-dimensional model along two bipolar axes. Gregorc (1985), for example, chooses concrete–abstract and sequential–random axes. This will give rise to four types of learner: concrete-sequential, concrete-random, abstract-random, abstract-sequential. These types are then described in terms of the 'parcel' of attributes obtained by the combination of these elements. Thus, Gregorc defines the concrete-sequential learner as ordered, perfection-oriented, practical and thorough. The abstract-sequential learner is logical, analytic, rational and evaluative. Abstract-randoms are sensitive, colourful, emotional and spontaneous while the concrete-randoms are intuitive, independent, impulsive and original.

The concept of four types in Western thought goes back a long way. In 340 BCE Plato defined four types: the *iconic*, or artistic type, the *pistic* or down-to-earth practical common sense type, the *noetic* the idealist and moralist, and the *dianoetic* or rational type. Aristotle proposed a different classification: *hedone*, those who find happiness in sensual pleasure, *propraietari*, those who find happiness in getting money, *ethikos* those who find happiness in morality and virtue and *dialogike*, those who find happiness in logic and rational enquiry. *Eudaemonia*, or well-being, comes from the pursuit of the latter two, rather than the former. Five hundred years later, Galen developed the humours theory of Hippocrates into the theory of the four temperaments: choleric, sanguine, melancholic and phlegmatic. Keirsey (1998: 22-26) provides a detailed discussion on these and other four-type theories and an attempt to align various historical four-type theories into a standard, universal classification. This four-type division is echoed throughout literature, from *The Tempest*, where Prospero, Miranda, Ariel and Caliban stand in Shakespeare's metaphor of the human mind for imagination–sensuality, reason–feeling, to Dorothy's journey down the Yellow Brick Road, where the characters' quests for Brain, Heart, Home, Courage define the polarities of thinking–feeling, and security–adventure,

or *Little Women* where Jo and Meg, Amy and Beth illustrate the polarities of imagination–practicality, self–altruism. It is tempting to see our own profession in the quadrants of Applied Linguist–Classroom Teacher, Materials writer–Manager (though I will leave it up to the reader to decide how these might relate to Rationalists and Idealists, randoms and sequentials, or *ethikos and proprietari*).

Problems with Learning Styles Theories

However unconsciously appealing or intellectually satisfying this pizza-cutting approach to personality might be, there are several problems with it.

First, it seems depressingly reductive to classify humanity into only four (or even thirteen) fixed types. This is understood by great writers, who people the pages of their books with many minor characters who exemplify other qualities than the oppositions embodied in the main protagonists, but not, apparently, by learning styles theorists.

Secondly, the theorists are by no means agreed on the polarities or how these should be combined to form types. Gregorc, as we have seen, combines abstract and concrete, random and sequential, while Kolb (1999), for example, combines concrete–abstract and active–reflective to give us Convergents (problem-solving decision makers), Divergers (imaginative, people-oriented types, interested in values and meanings), Assimilators (inductive reasoners, the creators of theories), and Accommodators (concrete, active, hands-on, practical people). The qualities parcelled together to constitute a type sometimes seem to be indissolubly linked: a problem-solver will always be a decision maker, a theorist will *ipso facto* be a reasoner, but sometimes do not necessarily belong together. Are people-oriented types always imaginative? Does practicality go hand-in-hand with perfectionism? Are impulsiveness and originality related?

Thirdly, many of the theories overlap and intersect in confusing ways. Kolb's Assimilators look very much like Herrmann's (1989) Theorists or Gregorc's abstract-sequentials, but his Divergers combine qualities found in Herrmann's Innovators and Humanitarians. The same oppositions (e.g. concrete–abstract) are to be found across many theories, but some theories offer perspectives or oppositions not found in others.

Lastly, there is much confusion over terminology. Different terms are used with apparently identical or very similar meanings. The global-analytic differentiation, for example, seems much the same as 'global–sequential', 'wholist–partist', 'holist–serialist', 'gestalt–analytic' or 'intuitive–analytic'.

In contrast, the same word may be used with different meanings. 'Intuitive', for example, is used in Jung, or Myers-Briggs' (1985, 1998) adaptation of Jung, to mean relating to the internal, ideational world, not the world of fact, and is opposed to Sensing: an emphasis on factual, practical external reality. In Allinson and Hayes' theory 'Intuition' is opposed to 'Analysis' and is described as 'immediate judgement based on feeling and the adoption of a global perspective, while analysis is concerned with 'mental reasoning and a focus on detail' (Allinson and Hayes 1996: 122). The distinction is thus rather more like the holist–serialist opposition.

Some terms are value-loaded. The value assigned to a quality in one theory may have the opposite value in another model: thus when impulsives are defined in opposition to reflectives, the resonance with fools and angels would imply that reflective is a more positive attribute, but when the opposition is defined as risk-takers versus the cautious, then it seems better to be a Fortinbras than a Hamlet and risk-taker seems the more glamorous option.

And, as if this Humpty Dumpty approach to terminology were not enough, some theorists invent their own words, sometimes, it would seem, unnecessarily: Apter's (2001) terms autic and alloic appear to mean pretty much the same as introvert and extravert, his haptic, much the same as tactile.

Which Model?

The first question, obviously, if we want our practice to take account of learning styles, is: which model should we adopt? Should we indeed adopt one particular model or a combination of them?

The recent detailed reports to the UK's Learning and Skills Research Council, *Should We Be Using Learning Styles? What Research Has to Say to Practice and Learning Styles* (Coffield *et al.* 2004a, 2004b), goes some way to clearing the confusion. Coffield and his team surveyed the field and evaluated seventy-one different theories from which they selected thirteen to review in depth. They collated all the available research into the validity and reliability of each model and found seven models that demonstrably had greater reliability and validity than the rest. Of these they recommended six.

Having an adequate body of research verifying validity and reliability seems the obvious criterion for selecting one model above another. However, the problem still remains: are we not, in selecting one particular

model, subscribing only to its creator's worldview and neglecting other important insights that could be afforded by consideration of other models, in rather the same way that a devotee of a 'designer' methodology such as The Silent Way ignores insights and principles that could be gained from another methodology such as Suggestopedia? In contemporary EFL practice we have moved beyond methods to define a best practice of principled eclecticism. Perhaps it is time to do the same for learning styles.

Further, I would argue that the parcelling together of qualities, although apparently making the teacher's task easier in reducing the number of learning styles that have to be catered for, in fact makes it harder. What kind of tasks would we design for a learner who is spontaneous, sensitive and colourful, or original, impulsive and independent?

I propose, therefore, to consider the seven more valid and reliable models from the Coffield study with the aim of collating the common core polarities used across the methods. Where qualities are 'bundled' together, I will 'unpack' the bundles in order to identify which polarities they contain, and to establish a core list of polarities that includes insights from different models. Finally, I will look at the implications for use of learning styles in general and consider their application for designing learning tasks in Language Teacher Education.

Coffield *et al.* (2004b) consider learning styles in five categories, from those at one end who consider learning styles to be fixed, even genetically determined, to those at the other end who consider styles to be mutable and learners as having the option to move between styles. This is a crucial distinction, since many implications for classroom practice hang on the question of whether we consider learning styles to be fixed or mutable: namely how far we should match teaching techniques and tasks to learning style and how far we should individualize instruction for different types of learner. These are questions that need to be addressed, so I will preserve the order in which these styles are considered—from fixed to mutable.

Myers-Briggs Type Indicator

Myers-Briggs is not included in the six models recommended by Coffield, although they found it comparable in reliability and validity. This seems to be mainly because the authors found it difficult to see how the sixteen types could be used to inform classroom practice. I propose to include it however, firstly for the sake of consistency, and secondly because the sixteen types, when unpacked, yield polarities similar to those found in other models.

The Myers-Briggs Type Indicator (1985) uses four bipolar scales derived from Jung. These are:

extraversion	—	introversion
thinking	—	feeling
sensing	—	intuiting
judging	—	perceiving

The first two need no glossing; the last two contain terms used in a very particular sense by Jung and Myers-Briggs. Sensing–intuiting has already been discussed. Judging–perceiving means the difference between those who like a fixed outcome: the list-makers, the schedulers, the decision-finalisers, and those who prefer to keep options open and explore possibilities. Myers-Briggs uses combinations of these polarities to construct sixteen types, (e.g. ISTJ: an introverted, practical, rational planner). This model is placed at the ‘fixed’ end by Coffield *et al.*, however the original theory by Jung did not regard types as fixed: indeed Jung views life as a journey towards reconciliation of the extremes.

Jackson’s Learning Styles Profiler

Jackson posits four types: the Initiator who is ‘sensation seeking, impulsive and extrovert, leaps before he looks, speaks before thinking things out’, the Reasoner who is ‘intellectual, and objective’, provides insight and rationality, the Analyst: the introverted, cautious, methodical, responsible planner and the Implementer: a realistic and practical down-to-earth doer. (Jackson 2002 summarized in Coffield *et al.* 2004b).

The types function in a kind of symbiosis: Initiators can get things moving, make things happen, Reasoners are there to hold them back and provide reflection and objectivity. Planners are there to give structure to the activities of the Implementers who put the analysts’ plans into action and save them from being paralysed by detail.

The bundle of qualities in each type suggests multiple oppositions are at work:

introvert	—	extravert
cautious	—	impulsive
practical	—	abstract
step by step attention to detail	—	holistic impressions
objective rationality	—	subjective feeling
planning	—	action

Apter's Reversal Theory and Motivational Styles Profiler

Apter's (2001) reversal theory of motivational states classifies our intellectual life into four areas: means-ends, rules, transactions and relationships. Within these four domains we swing between polarities of seriousness and play, conformity to rules and challenges to rules, power and love, self and others:

<i>Means-Ends Domain</i>			
Need:	Achievement	—	Fun
Style:	Serious	—	Play
<i>Rules Domain</i>			
Need:	Fitting in	—	Freedom
Style:	Conforming	—	Challenging
<i>Transactions Domain</i>			
Need:	Power	—	Love
Style:	Competitive	—	Affectionate
<i>Relationships Domain</i>			
Need:	Individuation	—	Transcendence
Style:	Self-oriented	—	Other-oriented

(Diagram adapted from Coffield *et al.* 2004b: 54.)

What differentiates Apter from personality type based models is that qualities like competitiveness and conformity are seen as shifting motivational states rather than fixed personal characteristics. The concept of reversal means that anyone can shift between styles as a result of different needs, motivations, situations. 'Everything stems from and returns to this fundamental series of binary oppositions between seriousness and play, acquiescence and resistance, power and love, self and others' (Apter 2001: 317). This is an interesting idea to apply to the field of learning styles as a whole: that individuals may have a predilection for a particular style but that they may be able to modify or shift between styles when motivated to do so or as a result of the demands of a particular situation. Apter makes the claim that such 'reversals' give the individual 'the possibility of every type of psychological satisfaction' (Apter 2001: 13)

Allinson and Hayes Cognitive Style Index

This is a single bipolar scale with intuition, linked to right-brainedness, at one end and analysis, linked to left-brainedness, at the other (though the

authors see brainedness as a metaphor rather than an actual description of what goes on in the two sides of the brain). ‘Intuition, characteristic of right-brain orientation, refers to immediate judgement based on feeling and the adoption of a global perspective. Analysis, based on left brain orientation, refers to judgement based on mental reasoning and a focus on detail’ (Allinson and Hayes 1996: 122). This would suggest three bipolar scales are involved, not one: immediate–reflective, global–detailed and thinking–feeling. Their later comment: ‘A left brain person is compliant, prefers structure and is most effective when handling a problem that requires a step-by-step solution. A right-brained person tends to be non-conformist, prefers open-ended tasks and works best on problems favouring a holistic approach’ (Allinson and Hayes 2000: 161), presents a bundle of attributes that, when unpacked, reveals further polarities, summarized below:

immediate	—	reflective
global/holistic	—	detailed, step by step
thinking	—	feeling
structured	—	open-ended
compliant	—	non-conformist

Herrmann’s Whole Brain Model

Herrmann (1989) used whole brain theory to posit four types supposedly corresponding to the four quadrants of the brain: left cerebral, right cerebral, left limbic, and right limbic. Though Herrmann began by basing studies on EEG research, he later came to use the brain more as a metaphor. The four types form two polarities:

Theorists, the Thinking Self	—	Humanitarians, the Feeling Self
Organizers, the Safekeeping Self	—	Innovators, the Experimental Self

Theorists find it difficult to understand and accommodate to Humanitarians and vice versa. Innovators have similar difficulties with Organizers.

Herrmann takes a ‘whole brain’ approach: he does not try to label people or regard styles as fixed. On the contrary, he emphasizes change and growth, arguing that for wholeness one must strive to integrate different sides of the personality, and that both increased pleasure and increased creativity can come from an effort to achieve a balance between the four ‘Selves’.

The remaining two models recommended by Coffield focus more on learning strategies than learning styles and thus may only be partially useful in a consideration of learning styles.

Entwhistle's Approaches and Study Skills Inventory for Students

Entwhistle makes a distinction between style, as 'a student's *preferred* way of tackling learning tasks', and strategy as 'the way a student *chooses* to deal with a specific learning task in the light of its perceived demands'. (Entwhistle, Hanley and Housell 1979: 368). Student approaches to learning can be surface (rote learning, the reproduction of ideas), deep (search for meanings and relationships, evaluation and analysis of ideas) or a strategic approach which combines the two. He sees style as connected to cerebral dominance (holist or serialist) combined with personality and divides students into four types:

- non-committers (anxious, cautious)
- hustlers (competitive, dynamic, insensitive)
- plungers (emotional, impulsive, original)
- reasonable adventurers who combine curiosity and exploration with reflection and evaluation.

Entwhistle's types are not constructed on polarities so their parcels of qualities are more difficult to unpack but reveal at least the following oppositions:

anxious	—	confident
impulsive	—	cautious
competitive	—	cooperative
insensitive	—	sensitive
emotional	—	rational
conforming	—	original
adventure	—	reflection
deep	—	surface

Vermunt's Inventory of Learning Styles

Vermunt's learning styles inventory (1994) divides learning styles into four styles which correlate with academic success:

- the meaning-directed learner who looks for relationships between ideas, builds on past knowledge and is intrinsically motivated

- the application-directed learner who is interested in practical details and concrete examples and wants to relate content to practical reality
- the reproduction-directed learner who wants to rote learn in order to get good marks in exams
- the undirected learner who finds study difficult and lacks confidence and wants input and guidance from the teacher.

Vermunt's categories cut across and overlap with Entwistle's: the non-committers clearly resemble the undirecteds, the meaning-directed learner resembles Entwistle's reasonable adventurer or deep learner, and the reproduction-directed learner resembles the surface learner. Like Entwistle's, these types are not polar opposites, though they do contain the following oppositions:

directed	—	undirected
meaning directed	—	application directed
meaning directed	—	reproduction directed
authority led	—	independent

Inventory of Polarities

We can now examine whether there are common themes that cut across these models or whether there are some perspectives only offered by one model. The oppositions are:

1. *Holist–Sequential* (Jackson, Allinson and Hayes, Herrmann, Entwistle)
Related terms; holistic–step by step, impressionistic–detailed, holist–serialist, right brain–left brain, global–detailed, intuition–analysis
2. *Immediate–Reflective* (Jackson, Allinson and Hayes, Entwistle)
Related terms: impulsive–cautious, initiator–reasoner, plunger–non-committer, doer–planner
3. *Concrete–Abstract* (Myers–Briggs, Jackson, Herrmann, Vermunt)
Related terms: implementer–analyst, sensing–intuiting, limbic–cerebral, application directed–meaning directed
4. *Extravert–Introvert* (Myers Briggs, Jackson, Apter)
Related terms: people-oriented–self-oriented, other-oriented–self-oriented
5. *Thinking–Feeling* (Myers Briggs, Herrmann, Entwistle)
Related terms: theorist–humanitarian, rational–emotional, objective–subjective

6. *Innovation–Organization* (Herrmann, Apter, Allinson and Hayes)

Related terms: conforming–challenging, compliant–non-conformist, conforming–original

7. *Judging–Perceiving* (Myers-Briggs, Allinson and Hayes)

Related terms: structured–open ended

8. *Single-minded–Fitting in* (Apter, Entwistle)

Related terms: competitive–non-competitive, competitive–cooperative

9. *Serious–Playful* (Apter)

10. *Authority-led–Independent* (Vermunt)

Related terms: reproduction directed–meaning directed

11. *Anxious–Confident* (Entwistle, Vermunt)

12. *Directed–Undirected* (Entwistle, Vermunt)

Related terms: reasonable adventurer–non-committer

13. *Insensitive–Sensitive* (Entwistle)

14. *Deep–Surface* (Entwistle)

The last five oppositions differ from the others in that they are value loaded. Surely our job as educators is to encourage our students to become confident, independent, sensitive learners, find direction, and be capable of deep, rather than surface, learning. These last five categories would demand a learning strategies approach or thinking skills approach that led learners from one less desirable pole to the other, rather than a learning styles approach which caters for both poles and attempts to find a balance between them. Such a strategic approach would certainly be compatible with a learning styles approach and could be used alongside it but is outside the scope of this paper so I will focus on the first nine polarities defined in the first section.

Of course, it could be argued that for some disciplines the other polarities may assume some value-loading: Mathematics, for example, would seem to place more value on abstract, analytical thinking than on a feeling, humanitarian approach. However, as I shall argue below, Teacher Education is a complex discipline, bringing together both rationality and feeling, abstraction and practicality, innovation and administration, intuition and analysis, so we should be concerned to avoid value-loading but rather embrace a multiplicity of styles.

The first five polarities are common to a great many theories, including those outside the range of this paper. The next four appear more rarely. It seems surprising that only one theorist, Herrmann, uses creativity as a

polarity, (the conforming–challenging contrast is clearly related, but creativity has the added quality of producing something new—you can challenge without creating). The opposition between creativity, the flouting of rules to create something new, and administration, the application of rules to preserve something fixed, seems a vital one to include in a taxonomy of learning styles. Similarly the structured–open-ended distinction seems fundamental, balancing the pleasure in completing a task with the pleasure of probing possibilities, and is a key element to consider when designing learning tasks. The last two oppositions do not seem quite so fundamental, but are useful reminders to the task designer, that there is pleasure to be had in single-minded concentration on a task as well as cooperative learning, and that serious learning can be done through play—something that every child knows but we as adults are in danger of forgetting.

The Place of MI and VAKT

The two models of learner difference that are most prominent in EFL materials and feature in training courses are probably Gardner's Multiple Intelligences and modality. Neither appear here. MI is not included in the Coffield survey and strictly speaking it is not a learning styles inventory, but deals rather with intelligences or abilities. This does not mean it is incompatible with a study of learner difference based on learning style: different intelligences presumably have different learning styles: a mathematical intelligence would have an abstract, sequential, rational, analytic style and an interpersonal intelligence would be feeling, extravert, global, intuitive.

Coffield *et al.* do consider modality in their examination of Dunn and Dunn's Learning Styles Inventory (1992, 2003) and conclude, somewhat surprisingly, that evidence points against it. However it is worth noting that this research is directed at trying to establish whether matching teaching techniques to a learner's preferred modality is successful in improving performance, not whether the use of different modalities to vary teaching technique and task design is desirable in itself. This would seem to be the case: Coffield *et al.* cite, 'a substantial body of research which points to the instructional value of using multiple representations and devices such as graphic organisers and manipulatives (things that can be handled)'. They conclude that 'if such impressive learning gains are obtainable from the general (i.e. not personally tailored) use of such methods, it is unlikely that basing individualised instruction on modality-specific learning styles

will add further value' (2004b: 13). So while Dunn and Dunn's particular model is not considered by Coffield *et al.* to be validated by research, and individualizing instruction so that learners are taught in their preferred modality is not recommended, significant learning gains do result from a general use of mixed modality. Since I am not about to argue for individualized matching of learning style and teaching technique, but rather for an inclusive approach, I will therefore include modality (VAKT) in the final task framework.

*Implementing a Learning Styles Approach in Classroom Practice:
To Match or Not to Match ?*

There are three possibilities for classroom practice and learning task design.

1. Matching teaching style and learning task to individual learners' preferred style.
2. Providing a range of input styles and learning tasks so that learners will sometimes get a task in their preferred style, sometimes in a style that they must adapt to meet.
3. Helping learners to move from one less successful style to another by teaching strategies and thinking skills.

The third solution is the one that would be most appropriate in the case of our last five oppositions and, as stated, is outside the scope of this paper.

The first is clearly logistically difficult. It is also questionable whether it is desirable. Coffield *et al.* quote nine studies in favour of matching and nine in favour of mis-matching. Whether we espouse the matching approach depends to a large extent on whether we believe that an individual's learning style is fixed and immutable or whether the individual can shift to accommodate other styles.

Apter's reversal theory and Herrmann's whole brain theory both stress the ability, indeed the desirability, of growth and change and stress the enhancement, challenge and satisfaction that can result from a mixing of modes, while Entwistle speaks of the 'constructive friction' that can result when students are pushed a little beyond their mental comfort zone (Entwistle and Peterson 2003).

Teachers, arguably more than most professions, have to be capable of 'reversal' and use their 'whole brain'. They have to be both holistic and

sequential, following a step-by-step procedure in planning a lesson, for example, while using more global qualities of intuition and empathy to gauge the mood of a class, or deal with the dynamics of a group. They have to balance risk-taking and reflection, being ready to think on their feet and give on-the-spot reactions but also able to reflect critically on their practice. They have of necessity to be people-oriented, but some quality of introspection and self-reflection is also necessary. They have to be concrete and practical, concerned with application, but should also understand the abstract principles and theories that underpin their practice. Teachers have to plan and organize: quite a lot of time is spent in the administrator role, but imagination, creativity and exploration of new possibilities is what lifts teaching out of the routine and pedestrian and keeps it keeps alive and fresh. We expect our trainees to conform to some extent—to accept notions of commonly held best practice for example, but we also teach them to be critical and challenging. They have to be thinkers, but feeling and empathy are crucial too. There are times when single-mindedness will be important, others when cooperation and fitting in will be paramount. Finally, good teaching is always a mix of the serious and the playful!

For these reasons I would argue that the second approach is most suitable for teacher education: we should avoid labelling our trainees, but rather base our education on the notions of wholeness and reversal, designing our learning tasks across the range of learning styles so that our trainees can move across the spectrum, experiencing both the comfort of matching and the challenge produced by mis-matching.

A Framework for Learning Task Design in Teacher Education

When we come to think about how the nine different polarities we have listed above could be useful to us in designing tasks in teacher education, it becomes apparent that the polarities relate to stages and aspects of the design process.

At the beginning of conceptualizing a task, the initial decisions are:

- whether it is concrete and practical or abstract and ideational
- whether it is holistic/global/intuitive or sequential/serialist/logical

These possibilities will define whether the task will require our trainees

- to think about and analyse theories and principles (abstract, sequential)

- to explore feelings and empathize (abstract, holistic)
- to organize information and plan things out (concrete, sequential)
- to create something (abstract → concrete, * holistic)

When we come on to the finer points of designing the task we can consider such factors as

- modality: visual, auditory, kinaesthetic or tactile?
- grouping: are students alone or with others. Is introspection (intrapersonal) or communication (interpersonal) is required?
- structure: is the task competitive or cooperative, requiring single-mindedness or fitting in?
- mood: is it a serious activity such as a discussion or a playful activity like a game or a role play?
- reaction time: are the students required to give immediate responses or is reflection time allowed?
- outcome: is the task closed or open-ended?

We could summarize these processes in a framework for task design (see Appendix).

The choices on the framework allow for very different tasks to be designed on the same topic. For example, if we take the topic ‘the advantages and disadvantages of authentic and scripted materials’, a task involving a group discussion on the subject would be structured on the following choices:

Thinking

- Abstract
- Sequential
- Auditory
- Interpersonal
- Cooperative
- Immediate
- Serious
- Open-ended

* Abstract in that creation begins with an idea, concrete in that something is created: the creator’s task is to give ‘to airy nothing a local habitation and a name’.

Changing any one of the factors will give rise to a different activity. Changing the task to a formal debate instead of a discussion, for example, would make it competitive rather than cooperative and introduces a tighter structure, so that the outcome, while not completely closed, is less open-ended than an unstructured discussion. It would also introduce a visual element, as participants write notes for their speeches and provide for a reflective period, as they assemble their arguments before the debate as well as for immediate reactions during the debate itself.

The above examples involve a thinking (abstract, sequential) focus. If the focus is changed, very different types of task can be designed on the same topic, for example:

- Observe a lesson or look at a unit of a textbook that uses authentic materials. Write a learner diary from the point of view of an imaginary learner in the class, expressing your feelings about the material: what did you like and what didn't you like?

(*Feeling*, abstract, holistic, auditory, visual, intrapersonal, single-minded, reflective, playful, open-ended)

- Work in two groups. Group A create a TV advert for authentic materials. Group B create a TV advert for scripted materials. Try to sell your 'product'! Be ready to perform your advert to the other group.

(*Creating*, abstract→concrete, holistic, auditory/visual/kinaesthetic, interpersonal, cooperative, immediate, playful, open-ended)

- Read the list of statements about authentic and scripted materials. Which apply to authentic materials and which to scripted. Write them in the appropriate places on the grid:

	<i>Advantages</i>	<i>Disadvantages</i>
Authentic		
Scripted		

(*Organizing*, concrete, sequential, visual, intrapersonal, single-minded, reflective, serious, closed task)

Each task, not only appeals to different learning styles but calls for different insights into/perspectives on issues surrounding authentic materials. Using a learning styles framework in this way can enable us to bring balance and variety into our course planning and provide a well-rounded

course that encourages trainees to use different learning styles, and cognitive processes. We can use the framework in different ways

- As a starting point for brainstorming different types of task
- As a personal checklist, as a way of regulating our own practice, to ensure that we do not fall into the trap of relying too much on one style of task (too many group discussions, for example)
- As a course planning structure, to ensure variety and balance across the course
- As a way of offering choices to our trainees, so that they can sometimes choose a task that matches their learning style, sometimes be encouraged to move outside their comfort zone to try something challenging
- As a way of bringing multiple insights into a single training session. A session on authentic materials, where trainees were divided into four groups and assigned (or chose) one of the four tasks above, then 'reported back' to the class with the results of their task, has the potential to provide a richer, more insightful learning experience than if only one task is assigned to the class as a whole.

Trainers could make these processes transparent to their trainees in order to facilitate understanding of learning style preferences and stimulate dialogue about the learning process.

Clearly much further work is need on the learning styles field. Coffield *et al.* call for 'independent, critical, longitudinal and large-scale studies' (2004b: 143) and Lynn Curry comments that without more research, 'researchers and users alike will continue groping like the five blind men in the fable about the elephant, each with a part of the whole but none with full understanding' (1990: 56).

While waiting for further illumination from researchers, which given the scale of enquiry recommended by Coffield *et al.*, will be some time in coming, I hope this might be a workable model and useful checklist for practitioners in Teacher Education, ensuring variety and balance across a range of tasks in order both to provide diverse learners with tasks they can relate to happily and to produce some 'constructive friction' when they are asked to operate outside their comfort zone.

*blest are those,
Whose Blood and Judgement are so well co-mingled,
That they are not a Pipe for Fortune's finger,
To sound what stop she please.*

William Shakespeare

REFERENCES

- Alcott, L.M.
1868 *Little Women* (Reprinted London: Penguin Books, 1994).
- Allinson, C., and J. Hayes
1996 'The Cognitive Style Index', *Journal of Management Studies* 33: 119-35.
2000 'Cross-national Differences in Cognitive Style: Implications for Management', *International Journal of Human Resource Management* 11(1): 161-70.
- Apter, M.J.
2001 *Motivational Styles in Everyday Life: A Guide to Reversal Theory* (Washington, DC: American Psychological Association).
- Apter, M.J., and K. Heskin
2001 'Basic Research on Reversal Theory', in M.J. Apter (ed.), *Motivational Styles in Everyday Life: A Guide to Reversal Theory* (Washington, DC: American Psychological Association).
- Aristotle
384–322 BC *Organon*. Reprinted in R. McKeon (ed.), *The Basic Works of Aristotle* (New York: Random House, 1941).
- Baum, L.F.
1900 *The Wonderful Wizard of Oz* (Reprinted New York: Tor Classics, 1993).
- Coffield, F., D. Moseley, E. Hall and K. Ecclestone
2004 *Should We Be Using Learning Styles? What Research Has to Say to Practice* (London: Learning Skills and Research Council).
2004 *Learning Styles and Pedagogy in Post-16 Learning* (London: Learning Skills and Research Council).
- Curry, L.
1990 'A Critique of the Research on Learning Styles', *Educational Leadership* 48: 50-56.
- Dunn, R.
2003 'The Dunn and Dunn Learning Style Model and its Theoretical Cornerstone', in R. Dunn and S. Griggs (eds.), *Synthesis of the Dunn and Dunn Learning Styles Model Research: Who, What, When, Where and So What: The Dunn and Dunn Learning Styles Model and its Theoretical Cornerstone* (New York: St John's University).
- Dunn, R., and K. Dunn
1992 *Teaching Secondary School Students through their Individual Learning Styles* (Needham Heights, MA: Allyn & Bacon).
- Entwhistle, N.
1998 *Styles of Learning and Teaching* (London: David Fulton).
- Entwhistle, N., M. Hanley and D. Housell
1979 'Identifying Distinctive Approaches to Studying', *Higher Education* 8: 365-80.
- Entwhistle, N., and E. Peterson
2003 *Conceptions of Learning and Knowledge in Higher Education: Relationships with Study Behaviour and Influences of Learning Environments*. Paper at Powerful Learning Environments Workshop, Antwerp.
- Galen
131–201 *On the Elements according to Hippocrates*. Reprinted in *Galen: Selected Works* (Oxford: Oxford University Press, 1997).

- Gregorc, A.F.
1985 *Style Delineator: A Self-assessment Instrument for Adults* (Columbia, CT: Gregorc Associates).
- Herrmann, N.
1989 *The Creative Brain* (North Carolina: Brain Books).
- Hippocrates
460–377 BCE *Airs, Waters, Places* available online at www.etext.library.adelaide.edu.au
460–377 BCE *On the Nature of Man*. Reprinted in *Hippocratic Writings* (London: Penguin, 1983).
- Jackson, C.
2002 *Manual of the Learning Styles Profiler*. www.psi-press.co.uk
- Jonson, B.
1599 *Every Man out of his Humour*. Reprinted in *The Works of Ben Jonson Part 2* (Montana: Kessinger, 2004).
- Jung, C.G.
1920 *Psychological Types* (Reprinted Princetown: Bollingen, 1976).
- Keirsey, D.
1998 *Please Understand Me* (California: Prometheus Nemesis).
- Kolb, D.A.
1999 *The Kolb Learning Style Inventory, Version 3* (Boston: Hay Group).
- Myers, I.B., and M.H. McCaulley
1985 *Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator* (Palo Alto, CA: Consulting Psychologists' Press).
- Plato
c.427–347 BCE *The Republic*. Text available online at www.etext.library.adelaide.edu.au
- Shakespeare, W.
1623 *Hamlet*, First Folio. (Reprinted in *The Complete Works of William Shakespeare* [London: Omega, 1986]).
1623 *The Tempest*, First Folio. (Reprinted in *The Complete Works of William Shakespeare* [London: Omega, 1986]).
- Sternberg, R.J.
1999 *Thinking Styles* (Cambridge: Cambridge University Press).
- Vermunt, J.D.
1994 *Inventory of Learning Styles (ILS) in Higher Education* (Tilburg: University of Tilburg).

APPENDIX

	<i>Thinking</i>	<i>Feeling</i>	<i>Creating</i>	<i>Organizing</i>
<i>Modality</i> visual auditory kinaesthetic tactile				
<i>Grouping</i> self/intrapersonal others/interpersonal				
<i>Structure</i> single-minded cooperative				
<i>Reaction time</i> immediate reflective				
<i>Mood</i> serious playful				
<i>Outcome</i> open-ended closed task				