
A Sharper Focus on Teaching and Learning Styles: Match or Mismatch and Their Constraints

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Tumpuan rencana ialah cara gaya pengajaran pembelajaran. Sifat, lunas dan andaian cara gaya pengajaran dan pembelajaran dikupas. Beberapa contoh cara gaya tersebut di kalangan guru dan murid dibentangkan. Pendekatan-pendekatan stail kognitif, trait dan personaliti, cara gaya kehidupan, pemprosesan maklumat, persepsi dan taraf perkembangan intelek dikesan sebagai asas konsep cara gaya pengajaran dan pembelajaran.

Masalah yang diketengahkan adalah berkenaan dengan persoalan memadan atau tidak memadan stail pengajaran dan stail pembelajaran. Kebaikan dan keburukan memadan atau tidak, dihuraikan.

Beberapa faktor pembatasan dalam usaha untuk memadan atau tidak memadan adalah dijelaskan dengan contoh yang terdapat dalam sistem persekolahan. Di antaranya ialah pembezaan individu, kemudahan dan kelengkapan sekolah, nisbah guru-murid, tempat dan ruang, kos dan manfaat, masa, tekanan peperiksaan, dan nilai masyarakat. Kesimpulan ialah bukan senang untuk memadan cara gaya tersebut dalam konteks sistem persekolahan yang ada. Jika tujuan untuk memadan cara gaya adalah lebih spesifik dan terhad, maka adalah mungkin ide tersebut boleh diamalkan. Dalam situasi kelas pemulihan atau pengkayaan, ia boleh dilaksanakan. Perakuan yang terpenting ialah untuk menyubur dan melengkapkan guru dengan stail pengajaran yang beraneka jenis, dan murid dengan stail pembelajaran yang pelbagai. Guru dan murid akan menjadi serba boleh.

Introduction

The relationship between teaching and learning styles is not exclusively complementary, linear, curvilinear, interactive or disjunctive, important as each may be. It may encompass all these forms of relationships. The particular relationship that may prevail will depend on the context and the variables which are dominant in their effects. It is the purpose of this article to present and delineate the broader issues and pervasive context which may effect, govern and constrain the possible relationship between teaching and learning styles. Through this increased understanding and sensitivity is the hope that more realistic decisions may be made pertaining to what we desire from the many possible relationships between them. Only then can we exercise a more informed and wiser choice in regard to the forging of a particular relationship between specific teaching styles and salient learning styles. This is with the pointed aim of achieving the goal or objective that we have given priority and set ourselves.

Assumptions in Teaching and Learning Styles

The construct style has been used in different situations for a variety of purposes. Nevertheless, we can still identify significant commonalities which characterise it. Concepts of coping, adapting, processing, perceiving, choosing, preferring and responding have been highlighted in different combinations.

Also implied is the fact that styles incorporates elements of traits, strategies, skills, and predispositions. These find expression in distinctive behavioural patterns. Similar to habits, a style is regular, consistent, persistent, stable and predictable. It is observable as one deals with the environment and the variety of challenges it poses. It is seen clearly in problematic situations where one strives for a solution associated with goals and objectives. The problem solving skills and strategies called upon and the manner they are utilized constitute a style.

Although a style has a hereditary base, it must be largely cultivated and developed through socialization and direct experiences in dealing with the variety of situations and challenges in life. As one acquires these coping and adaptive styles, one relies on them with regularity. This usually continues because it is relatively comfortable and efficient to the person in comparison to other styles which are not familiar to him. A style, therefore, possesses a high degree of generality and transferability over a gamut of situations.

Researchers find this construct attractive because it describes behavioral patterns, explains them, and enables prediction. Styles of coping and adapting can serve as powerful means to control and manage the environment or even oneself, for specific purposes.

The first psychologist to develop this construct and popularise it was A. Adler (Sarason, 1972). He used it in the context of life styles in the pursuit of definite goals or goals patterns. Implied throughout the themes he wove around the construct life styles, is the fact that they constitute an important personality dimension. This use has been extended to the domain of teaching, through teaching styles. Teaching styles refer to the teacher's strategies, skills and behaviours in teaching-learning situations. Learning styles pertains to one's characteristic choice and preferences in effecting and acquiring behavioral changes, both overt and more covert especially at the processes level. They are powerful conceptual tools which have not been fully capitalised. The optimal use of these promising and seminal tools can only be obtained when we pay more attention to how teaching styles interface with learning styles.

Educationist are never fully comfortable with ideas of permanence and unchangeability. Situations change, and teachers and pupils are malleable. Even goals, objectives and priorities may take new forms, directions and arrangements. Only the religious may accept the Divine as unchangeable; all else is not excepted. The major assumption that needs to be recorded after the explication on styles, teaching and learning styles, is that they can be changed through experience and training. Teachers and pupils may out of choice or necessity develop new styles of modify the old ones. There are variations in their strength, resistance or malleability. The span of time required for these changes may vary too. However, for these changes to take root as new or modified styles, they are to permeate into and be integrated with the other dimensions of one's personality. Only then can these teaching and learning styles make a dynamic difference in one's behaviours and the goals one hopes to attain.

Some Approaches in Teaching and Learning Styles

One approach that is more in consonance with the cognitive school of psychology, gives prominence to preferences in the mode of processing information. This information processing approach is predicated on the assumption that how we cope with and adapt to living and the environment rests significantly on our selective preferences and the manner we process information. These predispose us to almost habitual courses of actions and are associated with identifiable behavioral patterns.

D.A. Kolb (1976) proposed four styles of learning using this information processing approach. He uses two dimension which are fully crossed. The first is a perceptual dimension with two levels, namely concrete and abstract. The second is a process dimension, again with two levels as exemplified in doing and reflecting. The four styles emerge through combinations of the two dimensions and their respective levels.

A.F. Gregorc (1977) modified one of the dimensions used by Kolb, viz. the process facet. He respecified the process dimension with two different levels. Namely random and sequential. He, however, retained the perceptual dimension (concrete and abstract). In a factorial combination of the perception and process dimensions, we find four learning styles.

Another approach (McCarthy, 1981; Foss & Hakes, 1978) focuses on hemisphericity of the brain and the dominance of a brain hemisphere. This dominance finds expression in a particular style. The right hemisphere is associated with creativity and divergent strategies. Visio-spatial preferences also have their source here. In addition, the right hemisphere deals rather well with fluid, intuitive and subjective situations. The left hemisphere, in contrast, controls analytical, logical and convergent processes, and functions. The verbal domain is largely centred in the left hemisphere for right-handers.

Research has also indicated that individuals whether teachers or pupils, carry with them idiosyncratic cognitive styles (Goldstein & Blackman, 1978). The cognitive styles exercise cognitive controls through pervasive and predictable strategies, skills and sets. They exert decisive influence in information processing, problem solving and coping behaviours. It has been documented that an authoritarian, rigid and intolerant cognitive style of a teacher can be easily detected in the pedagogical styles he prefers to rely on. Similarly, pupil's cognitive styles as evidenced in their skills and strategies, are employed in dealing with different types of problems in their lives and environment. They have been established as part and parcel of their learning styles or styles in acquiring other knowledge, skills and attitudes (Gagne, 1985)

H.A. Witkin's conceptualization (Goldstein & Blackman, 1978) as seen in the two styles he postulated, namely field dependence or independence, attempts to reach the critical underpinnings of human adaptation and coping behaviours. These styles which he proposed serve the person in his quest of making sense of the world of bewildering stimuli. They, moreover, can be seen as tools or strategies in decision-making with significant predisposing effects and biases. Their final impact as captured by the decisions selected and the behaviours that emerge has clearly identifiable directions and characteristics. Witkin suggested, with empirical evidence, that field dependent individuals are largely characterised by global and undifferentiated strategies. His dependence on the ground, in a Gestaltist context, inclines him to passivity and conformity. In contrast, the field independent individual is far more differentiated, analytical and structured, possessing a keener sense of heterogeneity. The conceptual boundaries that he develops are sharper and more definitive. Different researches have related and extended his basic ideas to a variety of life's situations with value, emotional, social, perceptual and intellectual ramifications. The import is that these styles have far-reaching influences and effects. Both teachers and pupils adapt and cope using such styles, in especially teaching-learning situations.

D. Hunt approaches styles from the viewpoint of the person's conceptual abilities and skills (Joyce & Weil, 1980). He suggests that at particular points of time in an individual's development, he exhibits definite modes of dealing with situations and problems. These modes of adapting and coping are conceptual in nature. Basically, these conceptual styles, strategies, skills and sets range over a continuum. At one end, adjectives like rigid, structured, egocentric, simplistic, non-integrated, non-coordinate and discrete are used to describe the person's abilities to deal with varying degrees of conceptual complexity. At the other end of the continuum, adjectives like flexible, integrative, universalistic, creative, propositional, transcending and mobile are employed to describe a more complex conceptual style, and by implications a highly desirable style. Here again, Hunt and his co-researchers cite evidence that these styles are discernible and pervades throughout coping and adapting behaviours. Teaching and learning styles can be treated in many ways as extensions of personality theories. In proposing and discussing these styles, many have, for example, relied heavily on the trait approach (Pervin, 1975). It is in fact not strange that these styles can be subsumed under personality theories. Basically, the construct personality (Pervin, 1975) addresses itself to both similar and identical issues. It describes, explains and predicts a person's dynamic adjustment and adaptation to the environment and the challenges the environment poses. It assumes integration of different aspect and traits within a person. It also covers important facets of the interaction between the person and his environment, and their consequences.

Some Examples of Teaching and Learning Styles

A few examples would serve to concretize the constraints of teaching and learning styles.

Some teaching styles are;

(a) **Teacher-pupil relationship**

Democratic and authoritarian; warm-supportive or critical, punitive styles.

(b) **Commitment to objectives and task**

Goal and task orientation to human relationship orientation.

(c) **Control and management of the teaching-learning situation**

Structured and unstructured; and different approaches to disciplinary situations and problems.

(d) **Guidance**

Teacher domination with meticulous directions or independent work; formal or informal interaction; amount of delegation of responsibilities or centralized responsibilities; flexible or rigid styles.

(e) **Modalities**

Preferred modalities as seen in oral, visual, auditory approach; verbal, enactive or affective, doing or reflecting preferences.

(f) **Presentation**

Expository (inductive, deductive) or heuristic; structured or unstructured; synthesis or analysis; sequential-logical or intuitive; abstract or concrete; open-ended or paced closure; discussion and activities or chalk-talk strategies.

(g) **Reinforcement**

Immediate, delayed, withholding, concrete or abstract; direct or indirect reinforcement practices.

(h) **Values and attitudes**

Preoccupational strategies for the fast or slow pupils; remediation or enrichment; basics or challenging explorations.

(i) **Motivation**

Humorous or spartan; intrinsic or extrinsic approaches.

(j) **Interaction**

Teacher dominated; dyadic, triadic or wide spectrum participation.

Several learning styles have been proposed and identified, and among them are the following:

(a) **Information processing and perception**

Field dependence and independence.

(b) Conceptual complexity dimension

Simplistic, rigid, egocentric and discrete approaches as against complex, flexible, mobile, transcending, universalistic and propositional strategies.

(c) Reaction

Impulsivity and reflexivity

(d) Modalities

Preferred media or sensory modalities.

(e) Inductive-deductive dimension

Progressive differentiation set against progressive integration.

(f) Open-closed system thinking

Divergence and convergence

(g) Closure

Tolerance for ambiguity and flexibility as opposed to rigidity and intolerance when facing ambiguity; different speed and modes of imposing closure (reflective or impulsive).

(h) Creativity

Adventurous, daring and exploratory as contrasted to conforming and acquiescing styles.

(i) Organization for understanding

Synthesis, integration and wholistic patterns as opposed to analysis and reductionistic approaches.

(j) Emotions

Degrees of tolerance and effects of anxiety and stress; integrated or disintegrative effects as seen in coping styles.

(k) Method

Structured or unstructured methods; intuitive or logical and sequential procedures.

(l) Mode of participation

Doing or reflecting styles.

(m) Form of content

Concreteness or abstractness; symbolism; semantic, episodic, kinesthetic or iconic approaches preferred.

(n) Reinforcement

Deferred gratification or immediate gratification; form and types of reinforcement preferred; schedule of giving praises and rewards that is most effective for them.

Match or Mismatch

Gephart et al. (1980) presented several models for matching teaching and learning styles. The major assumptions implied are:

- (a) efficiency in functioning for both teachers and pupils;

- (b) comfort and minimal stress and anxiety in a teaching learning situation;
- (c) optimal process and interactive conditions produced with maximal output and returns; and
- (d) high level of satisfaction.

The case for matching and co-ordinating teaching and learning styles is seen as unassailable and should be strived for. Gephart et al. (1980), however, recognizes the value of a mismatch as a source of pressure. Mismatch serves as a spur for both teachers and pupils to adjust and develop new styles. A mismatch, therefore, poses a challenge to cope, adapt and grow. Reality situations and demands often impose severe restrictions and leave the person no choice but to cope, adapt and develop new skills. Teachers and pupils are not free of these demands and impositions. Consequently, a mismatch is useful to remind teachers and pupils of the diversity of challenges presented by reality. The thorny issue that still remains, pertains to the nature and characteristics of the mismatch that can assume a positive role with optimal effects on both teachers and pupils. It could well be that the gap in the mismatch is so divergent and discordant that the effects are counter productive in that they are disruptive and disintegrative. This should serve warning that simple and facile suggestions that may appear appealing should be analysed and understood more clearly. Unless we can control the deleterious consequences and maximize the positive and desired effects on both teachers and pupils, it remains a global, abstract, diffuse albeit attractive idea still not fully mapped out for effective implementation.

Dr. Hunt's suggestions (Joyce et al., 1980) are fundamentally the same of both a match and mismatch between teaching and learning styles. The characteristic focused by him is the varying abilities of both the teachers and pupils in handling complexities. These skills are founded on the person's level of conceptual complexity. They include the person's abilities to handle different viewpoints, varying number of dimensions and a variety of interactions. They are measured in terms of flexibility, rigidity, mobility and range of outlook; and also degrees of universalism. The different levels of conceptual complexity postulated by him resemble stages of cognitive and moral development proposed J. Piaget (McNally, 1977) and L. Kohlberg (Thomas, 1979). D. Hunt argues for matching taking into account the teachers and pupils level of conceptual complexity to boost performance and achievement. Whilst making a case for matching, he also recommends mismatching as a catalyst to stimulate the acquisition of new skills and progression to higher levels of conceptual complexity.

The Aptitude Treatment Interaction Model (Cronbach et al., 1977) fundamental proposes matching pedagogical methods and characteristics of the learner to maximize achievement. Based on empirical findings, this model seeks an optimal match. Decisions are then made as to the instructional methods or styles, the pupils in different groups are best exposed to. Here again, the approach is not a categorical best style or best method emphasizing a main effect but an approach that gives weight to the interaction between pupil characteristics and instructional approaches. Matching or assignment of pupils to instructional conditions has to take into account this interaction. A typical example is the finding of F.J. Dowaliby et al. (1973) that low anxiety pupils perform better with student-centered methods. (i.e. discussion method); high anxiety pupils react favourably to teacher-centered methods (i.e lecture method).

Constraints in Matching or Mismatching

The logic underpinning the case for matching and mismatching is very compelling and appealing. The conceptual attractiveness of the ideas alone cannot guarantee the success sought for in implementation. Consequently, we need to take another important step, that is locating these catching ideas within the framework of the realities of our school system. The urgent

is to take a sharper and more critical look at the constraints which circumscribe these task theoretically sound ideas. We need to understand how these constraints operate to set definite limits on and boundaries for these pedagogical concepts of matching and mismatching.

Matching and mismatching tasks pose daunting problems and challenges which may put them beyond the practical boundaries of implementation. In the Malaysian context, a teacher, on the average, carries a load of about 6 to 7 periods a day. This works out to over 5 hours per working day. He may enjoy about 1½ free periods per day. The teacher usually teaches about 5 different classes daily. In practice, he may have a heavier load especially if other teachers are indisposed or not in school for a variety of reasons. In these instances, his free periods are expendable through relief work in other classes. It is only in his backdrop that we may fully comprehend the magnitude and complexity of the challenges and problems.

The class of about 40 to 50 pupils is the organizational or grouping unit that the teacher deals with. In the Malaysian educational system, streaming is not looked on with favour. It is tolerated out of necessity. In most classes then, the range of individual differences among the pupils is significant. Under most circumstances, the wide range of individual differences that exists in a class creates severe problems for the teacher and tests his skills and personality to the fullest. The dilemmas which will stretch him exhaustively are not easily resolved as they are complicated and compounded by other even more thorny and stringent constraints.

In a classroom situation where heterogeneity is more the rule, it may be difficult for us to think of a dominant learning style. The variety of dominant learning styles amongst the pupils may also be fairly divergent. In such a case, resolution through working out an "average" dominant style may not be completely feasible.

A teacher may have to entertain 3 or 4 or 5 related groups of dominant learning styles in a class characterised by heterogeneity. It does not take much to grasp the problems posed by this diversity of styles among the pupils for matching or mismatching purposes.

The teacher factor may also constrict maneuverability in matching or mismatching. If the majority of the teachers possess only one dominant style, and if most of the teaching styles are similar (e.g. chalk and talk; textbook work), then matching this narrow range of teaching styles with the variety of learning styles may be well nigh impossible in most classes. For this to be practical and implementable, we need teachers who are versatile, possessing a variety of styles. This gives maximum maneuverability in matching or mismatching in a class. The situation is even better than that where there is a pool of different styles among the teachers. However, each teacher in this pool, has only a dominant style. Maneuverability is definitely less in this example, especially when one takes into account the constraints of teacher loads, subjects and class specialization. Hence, in ordinary situation, matching or mismatching is only practical as an extensive pedagogical arrangement if the teachers are characterised by versatility in teaching styles. The teacher then selects from his repertoire of styles to match those of his pupils. This type of versatility among teachers is more the exception than the rule. Most are generally only comfortable with 1 or 2 dominant teaching styles.

An important factor which has a significant bearing on the choice of teaching and learning styles is time. It is very apparent and usual that teachers and pupils have to achieve herculean goals within the short span of time that is allocated. When one takes into account the amount of time not well used or wasted, one realizes the actual amount of time spent on teaching and learning is considerably less than what has been provided. This time constraint and pressure does not allow a wide spectrum of choices in regard to teaching and learning styles. A pointed example is the use of heuristic strategies which requires sufficient and ample time. Very often, expository teaching and reception learning (Dembo, 1977) are a more efficient and practical styles taking into account the coverage of the objectives and the amount of time available.

In a society where education is a powerful and effective means of upward social mobili-

ty and where competition is intense, the examination system generates pressures which cannot be resisted. These pressures interact with and find their support in the society at large. The value placed on performance in examination distort the teaching and learning styles selected and actually employed; and frequently short circuit the learning which may be considered best taking into account the characteristics of the pupils.

The exigencies created by these often consuming distortionary forces dictate the choice of teaching and learning styles. In such a situation it is far more usual to obtain convergent and highly structured styles than more divergent and creative styles. This merely exemplifies how teachers and pupils align themselves to these over-powering constraints and reality demands.

Matching or mismatching teaching and learning styles require facilities and space. Different classes of pupils may have to be restructured into other smaller or bigger groups. This restructuring will be based on learning styles. However, other priority factors have been taken into cognizance in these grouping exercises. Levels of cognitive development, progress in the different subject areas, availability of teachers with suitable styles, and different specific pupil needs are but some of the more important factors that must enter into decision-making about the grouping of pupils to achieve a degree of homogeneity that is practical. To enable the different groups of pupils and teachers with various styles to function freely and effectively, rooms, space and appropriate supporting equipment are needed to ensure success in implementation.

In comparison with these requirements, most schools in Malaysia, especially those in the urban areas, are double session schools. The facilities are used by 2 schools functioning from early morning to late in the evening. Many of the rural schools are severely lacking even in the basic equipment and facilities.

In implementing matching or mismatching strategies, the cost factor must be considered and weighed in the balance together with the projected benefits. This cost factor can be illustrated tangibly through the teacher-pupil ratio. Small and favourable teacher-pupil ratios are pre-requisites for effective and successful implementation. It is especially important if the situation among pupils and teachers is widely heterogeneous. To cope with this challenge, grouping strategies involving small and more homogeneous instructional groups must be formed. To manage this variety of small groups, there must be a sufficient number of teachers who are adequately versatile in terms of teaching styles. This requirement in terms of teachers raises costs. Unless the benefits are very significant and can be demonstrated in palpable ways, decision-makers may balk at the increase in cost demanded for effective implementation.

Despite the dampening constraints cited, matching or mismatching may be of optimal value for specific and sharply delineated purposes. Special tutorial, remedial and enrichment groupings on a limited scale, may make this feasible for more specific purposes. These examples suggest that we need not give up these strategies for fear of the constraints. We should, nevertheless, think more carefully how we intend to use matching and mismatching for these specific purposes with maximal and optimal effects.

Some important guidelines pertinent and addressed to these more modest ends, are formulated to:

- (a) understand the purpose of matching or mismatching.
- (b) set the objective out clearly. It may be crucial to consider the different domains and levels of complexity of the objectives as they are important factors in selecting appropriate style. Gagne's (1985) classifications as follows is helpful:
 - (i) intellectual skills;

- (ii) cognitive strategies;
 - (iii) verbal information;
 - (iv) attitudes; and
 - (v) motor skills.
- (c) identify possibilities and alternatives in matching or mismatching and learning styles.
 - (d) identify and map out the important and relevant constraints, and their trade-offs.
 - (e) demarcate and define priority criteria decision rules governing different objectives; use of appropriate learning and teaching styles; and their various constraints.
 - (f) arrange for control or manipulation of factors and constraints at the implementation stage. This is critical in delivering the goods actually intended in matching or mismatching.
 - (g) start with specific purposes under special situations (remedial and enrichment teaching and learning situations).

Conclusion

When confronted with this multitude of difficult constraints in matching or mismatching, we need to return to basics. We start with the first major assumption, that is, teachers and pupils can develop new varied styles. The task of matching or mismatching is reduced to much more simple proportions if teachers and pupils are versatile in and receptive to a wide range of styles. As teachers and pupils are more versatile and flexible through possessing a broad spectrum of styles, many of the constraints lose their hold and become less overpowering or decisive. The alternatives available also increase immeasurably.

The priority concern is, therefore, to train or help teachers and pupils grow and develop a variety of styles. At the very least, they should be more comfortable with different styles. As we associate all the different styles with technique of incremental and progressive goal setting, and more importantly, with experiences of success, this acquisition of a variety of styles would be more and more within the reach of teachers and pupils. Based on this foundation of versatility through possession of many different styles, matching or mismatching for specific or other purposes can then be translated into reality within practical bounds.

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