

Understanding of learning styles among VET practitioners

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Abstract

The research described in this paper investigated the understandings of the concept of learning styles among VET teachers and trainers; and the perceived usefulness of learning styles as part of VET delivery considerations. The research took place in six provider sites across three States, and involved some 240 VET practitioners in a questionnaire, in focus groups, and in case studies. The questionnaire component of the research indicated that VET practitioners identify learning styles among their students along two major dimensions. The first of these relates to teacher observation of group and individual responses to content presentation methods; and the other is associated with observation of preferred contexts for learning. The qualitative components of the research indicated that VET practitioners identify a wide range of values in an understanding of style, as well as display a considerable understanding of style as an expression of individual differences. An iterative model of practitioner style identification and response to style was developed from the combined quantitative and qualitative data.

Introduction

The broad body of research in learning styles and learning preferences has been largely framed around the use of standardised learning styles inventories which reflect a theoretical position held by the test constructor. Apart from establishing styles and preferences as part of the legitimate expression of individual differences between learners, the vast body of research has also served to develop a number of understandings about styles and preferences, their amenability to change as a function of learning task and environment, to their development in individual learners, and to personal demographics that affect styles and preferences. Additionally, the research has been useful in exploring whether or not the matching of styles/preferences to teaching is effective in terms of the learning process or its outcomes. Within a research environment the use of standardised inventories has been effective, but there are substantial limitations on that sort of approach within the practical VET teaching and training environments where it is seldom possible for an instructor to administer a learning styles inventory to groups of students. Even where that may be possible, there are additional constraints on the effective use of the data generated from inventories for adjusting teaching 'on the run' in group situations. As Coffield, Moseley, Hall and Ecclestone (2004, p.40) have observed, 'It is hard to imagine teachers routinely changing their teaching style to accommodate up to 30 different learning styles in each class, or even to accommodate four...'

Acknowledging the observation by Darling-Hammond (2000) that effective teachers adjust their teaching to suit diverse learners, Smith (2001) has argued that the effectiveness of a knowledge of style to enhance teaching may be associated with the level of analysis of style accepted by the instructor. For example, he suggested, where an instructor has a complex set of data on any given learner, or group of learners, across a high number of style or preference dimensions, disappointment is likely to attend any attempt to adapt teaching to that data set. On the other hand, he

argued, a simpler set of dimensions of style may enable an instructor to respond in a more meaningful and useful way. Accordingly, Smith suggested that the theoretical positions that adopt a small number of dimensions, often just two, of style variation (eg Kolb, 1976; Riding, 1991; Smith 2000) may be more successful for teachers to use than the more complex multi-dimensional theories such as Dunn and Dunn (1978), which provides scores on 22 dimensions. In those simpler models the teacher has only to assess where on only a very few dimensions a student seems to be, and so only has to process and deal with a limited amount of knowledge.

More often than not, though, in the practical environments of instruction, teachers and trainers have no data to work with other than what they glean from their own observations of students as they work with them. In an early large scale study undertaken in a VET environment, Smith and Lindner (1986) showed that VET teachers were able to make reasonably good judgements about the learning characteristics of groups of students under their instruction, but that they actually did little to adjust teaching to cater to those characteristics. The evidence was that teachers recognised some need to respond to style but had little opportunity to do so in group learning situations (Coffield et al, 2004), and little knowledge of how they might go about it. Merrill (2000), for example, has argued that more fundamental issues of teaching, such as the instructional strategies to be used, should take precedence over a knowledge of learning styles in developing instructional plans. I concur with Merrill's view, but make the point that an understanding on the part of instructors of the styles or preferences among their learners can be of value in developing instructional strategies and teaching methods. The substance of our research was to investigate how teachers and trainers make these identifications of style or preference, and what value they see in doing so. The research does not seek to ascertain the accuracy of these teacher-made observations, nor to establish whether or not teacher response to these in their teaching has a positive effect on learning outcomes or the learning experience of students.

There is little research that appears to have been conducted on that naturalistic observation and identification of style within classroom settings, indicating something of a gap within the vast body of literature available on learning styles and preferences. Taking into account the argument made above that the majority of teacher identification of style is most likely derived through observation of students as they work within the classroom or elsewhere, rather than through the administration of any standardised inventory, the apparent gap in the research is even more puzzling. However, there is a body of research directed at identifying the ways that teachers develop and modify their own theories that are grounded in practice. Both Brookfield (1995) and Brown and McIntyre (1993) have recognised that practising teachers need to develop their own theories while Wheatley (1999, Ch.7), writing in the broader context of chaos theory has pointed to 'the strange attractor of meaning', whereby mankind looks for order and meaning among seemingly chaotic data and experience. In his model of teachers' practical theories, Marland (1997) has recognised the wide range of sources through which teachers derive information while they are teaching, and develop a theory of practice through those observations.

One attempt focussed particularly at researching and developing teacher sensitivity to style identification in classroom settings has been made by Rosenfeld and Rosenfeld (2003) whose paper also has concluded, along with Sleeter (2001), that there is little

research on how teachers achieve understandings of student style through observation and interaction. Their research involved a professional development program for teachers, followed by research into how that program has impacted on observation of style in class. The research involved interviews and focus group sessions with teachers to discuss identified teaching incidents that had led to greater insights into the individual learning differences among their students. The results indicated that there were positive effects in the commitments that teachers made to identifying and responding to style, and their willingness to accept style differences as legitimate forms of individual difference. There was evidence that teachers used teaching and learning incidents with individual students to make these style assessments, and that teachers also developed ways of 'testing' their hypotheses about individual student styles.

The research reported in this paper is a subset of the broader NCVET project (Smith & Dalton, 2005), and focussed on several issues. First, the research was designed to assess how well the concept of style or preference as an expression of individual learning differences is understood and accepted by VET teachers and trainers. In this context the distinction made between styles and preferences is that proposed by Sadler-Smith (1996: 186) who defined 'learning style' as a 'distinctive and habitual manner of acquiring knowledge, skills and attitudes through study or experience'; and 'learning preferences' as 'the favouring of one particular mode of teaching over another'. The two terms are used with those meanings throughout this paper.

Second, the research focussed on how teachers go about identifying styles or preference as they go about their teaching, and how they then used the identifications that had been made.

Method

The research took place in six VET locations across Australia. Five of these locations were TAFE institutes, and one was a network of private trainers and assessors. A 22-item questionnaire designed to inform the research on how VET teachers identify style, how confident they feel about those identifications, and whether they use those identifications in teaching, was administered to 160 practising VET teachers – 79 males and 81 females. Three focus groups of teachers were held in each of the six locations. Eighty-eight teachers were involved in these focus groups, with teachers who taught collectively across AQF levels I to VI. Thirteen detailed case studies of individual teachers also formed part of the research.

All teacher participants in this research volunteered to participate after advice that the research was to take place in their organization. Accordingly, the sample is likely to be biased towards teachers who already had an interest in matters to do with style. This biasing effect was likely to have been more strongly influential in the focus groups and case studies where a considerable time commitment was involved for each participant, and where their individual views were expressed openly and discussed. The questionnaire data is most likely less influenced by that bias since the time commitment for participants was only several minutes, and their views were strictly anonymous.

Quantitative data from the questionnaire was analysed using SPSS. Qualitative data was analysed from transcripts and reports of each of the focus groups and case studies, and common themes identified through content analysis.

The research took place in the third quarter of 2003.

Findings and Discussion

Understanding of style and preference

Results indicated that the concept of learning style is well understood by VET teachers as a legitimate form of individual difference expressed in the ways their students learn. However, in the main the concept of style is understood as inclusive of preferences for different forms of learning, rather than as styles that are related to habitual information processing characteristics, or as dimensions of personality. There was a common distinction made between learning style and learning strategy, with an understanding that strategies were associated with the activities and processes students use to learn. The identification of preference was normally at a macro-level of analysis characterised by identifying sensory modality preferences, together with student preferences for:

- ◆ self-paced learning, self-direction and independent learning;
- ◆ reading;
- ◆ hands-on experience;
- ◆ learning with structure and guidance; and,
- ◆ learning through social interaction with others.

The case study component of the research revealed a separate and interesting dimension to the investigation of understandings of style and preference. A number of teachers in the case studies were aware of particular theories of style they found useful and generative in making identifications among individual students, and responding to those through their group and individual teaching activities. Probably more interesting, though, was the small numbers of case study participant teachers who had developed their own set of understandings and theory of style through observation and practice, and who had not read any published theory – or at least that they could remember. Sometimes those self-developed theoretical ideas could be identified as closely resembling an established theory. One case study teacher had developed a position very close to Howard Gardner's theory of multiple intelligences. When asked by the researcher if Gardner had influenced that self-developed theory, the teacher responded by saying she had not previously heard of either Gardner or his theory. As work yet to be done from this project, we intend to map teacher-developed theories as they were told to the researchers, against established theories to identify which established theories seem to be most closely associated with the theories developed by teachers as a result of intuitive observation and reflection. Although the focus group data did not provide such rich understandings of teacher-developed theories of style or preference, it was widely evident that such theories were present among participants.

On the issue of responsiveness to student style or preference, two views were commonly provided in the focus groups. First, there was a view that such

responsiveness is simply part of good professional practice that teachers and trainers need to engage with. Second, that responsiveness to style or preference represents a form of good client service that should be, or is already, part of the business strategy developed by the RTO to enhance customer satisfaction and repeat business. There were also lamentations that these forms of responsiveness are often frustrated by lack of time; and that teaching to training packages also thwarted attempts at responsiveness. There was also the view expressed by others, though, that training packages actually provided scope for greater responsiveness to individual learner characteristics.

Identifying style or preference during teaching sequences

The questionnaire data was factor analysed statistically and identified three clear and strong factors. The first of these factors related to teacher commitment to the identification of style or preference, and responsiveness to it. The second factor was associated with the identification of preference through observation of individual students as they responded to different content presentation methods provided by the teacher. These content presentation methods included visual, auditory, and experiential alternatives such as demonstrations and hands-on practice. The third factor showed that teachers identified preference through observing how individual students responded to different learning contexts, such as group learning, discussion, independent learning and reading.

The focus group and case study qualitative data indicated that teachers normally commence each new group of students with pre-conceived ideas about *group* preference, based on their experience with similar groups in the past. These pre-conceptions about the *group* were modified by teacher observation of the preferences of *individual* students, such that the characteristics of individuals were fed into the cognitive 'picture' the teacher had about the group, and in that way modified their conception about the group. The observations teachers made of individual learners conformed to the factor analysis of the questionnaire data insofar as the two major dimensions used to identify individual preferences were content presentation and learning context. The process used by teachers was iterative in that the observations of individual preference were ongoing, and continually fed back to further modify and refine the conception of both group preference, and the preferences of each individual learner. Responses to preference were then made through group organised instruction as well as instruction and assistance provided to individual learners.

The case studies indicated that participant teachers had developed ways in which they 'tested' their hypotheses about the styles and preferences of individual learners. The process here was that, through observation of learner response to different content presentation methods, and differently organised learning contexts, teachers developed hypotheses about the learning preferences and styles of individuals. It was then not at all uncommon for the teacher to informally 'test' the hypothesis that had been formed by either providing the learner with a learning experience expected to be favourably responded to, or one that the teacher felt would be discordant with that individual. Through observation of the learner while engaged in that learning experience, the teacher would be assisted in confirming, disconfirming, or modifying the hypothesis that had been developed. This also appeared to be an ongoing process that reduced in frequency as the teacher's 'picture' of the individual learner firmed.

Figure 1, drawn from Smith and Dalton (2005), is a visual representation of these processes.

Discussion

The findings with regard to teacher understandings of style (largely as preferences) are heartening insofar as it was common for teachers to have an understanding of styles and preferences as legitimate forms of individual learner difference. As a limitation of the research it is important to recall the likely bias in the focus group samples towards teachers who were already interested in styles of learning. Nevertheless, the widespread acceptance of style and its potential importance as part of good practice is consistent with other views expressed in the literature (Darling-Hammond, 2000; Rosenfeld and Rosenfeld, 2003), and with earlier Australian VET research (Smith & Lindner, 1986). Also consistent with the broader research literature is the finding that there is a belief that responding to student style either enhances learning or, at least, enhances the enjoyment of the process of learning (eg Rosenfeld & Rosenfeld, 2003).

It is useful to recall here that these views among VET teachers of learner differences expressed through styles and preferences are largely derived without necessarily having a knowledge of any accepted theory of styles and preferences. It is the contention in the current research, along with Felder (1996), that what is important here is that there is recognition of these differences, and that there is a preparedness to respond to them, and that subscribing to a recognised theory is a matter of secondary importance, if it is important at all. Taylor (2002), for example, argues that good teaching practice is marked by responsiveness to individuals, and has advocated a pragmatic approach in the development of 'simple practitioner manuals' as a guide to learning methods and styles. Taking into account the views expressed by several writers (Brookfield, 1995; Brown & McIntyre, 1993) that teachers are continually building and modifying theories that are grounded in their practice, what is most likely here is that teachers have developed their own theory about styles and preferences. Inevitably, as our research has indicated, some of these theories will resonate and intersect with established and published theories.

However, the rather more liberal and pragmatic view that a sensitivity to styles and preferences is what is really important, rather than a knowledge of established theory is not shared by all. For example, Coffield et al (2004) argue strongly that it matters a lot which of the published theories a practitioner decides to adopt and use to guide teaching responses to style. The Coffield et al study finds deficiencies in most of the theories and instruments, and advocates that only those that are recommended from their research should be adopted. While the Coffield et al position is accepted here as a valid one, there is also argument for the adoption by teachers of a model of styles and preferences that works for them, and that enables them to make sense of learner differences as they observe, and that provides capacity to respond through teaching. However, it is suggested here that further investigation would be valuable in establishing the effectiveness of teacher-generated pragmatic notions of style and forms of response to learning enhancement or learner experience. There appears to be little such research, and the current study was not designed to test that either.

Particularly interesting in the current study were the findings on how teachers do go about identifying learner styles in classroom settings, how they ‘test’ these identifications, and what they do about them. The evidence from this research is that teachers identify two major domains of style/preference expression – one through the presentation of content; and the other through the contexts within which learners like to learn. These two domains make intuitive sense, and conform largely to the domains identified through research (Gruber & Carriuolo, 1991; Smith, 2000).

The model presented in Figure 1 is based on these two dimensions, and is iterative in that it provides for teacher preconceptions about group preferences to be modified through observation in class; for those modifications to be tested; and for the observational and modification data to be used as feedback to further modify the conception about the group. Marland’s (1997: 41) model of teachers’ practical theories has some similarities to the model proposed here in that it recognises the appropriation of cues from teaching situations and the teacher’s own beliefs as interacting and modifying the teacher’s theory as teaching proceeds. In looking for a theoretical framework within which to further develop the model in Figure 1, constructivist theory has appeal, where we centre the VET teacher as constructivist learner. As Tenenbaum et al (2001: 89) observed, constructivism ‘views knowledge as an entity, which is mentally constructed via the actions and experiences that the learner undergoes with the immediate learning and broader social environments’. The learner is continually adapting a mental schema through consistent interaction with the external environment. Constructivism then accepts the teacher’s preconceived notion about the learning characteristics of any new group (see Figure 1) as mental schema which is then modified and adapted through environmental observation of learners in the classroom, but also through the discussions and interactions with other practitioners. That mental schema is further modified through the iterative process identified in the current research and depicted in the model. That iterative process also involves the teacher in situated cognition through adapting and testing the authentic activities (Brown, Collins & Duguid, 1989) of the classroom through the informal ‘testing’ and observation of student responses to different teaching techniques.

The modifications to already established schema made by teachers are largely through the observations of individual learners, and it is these individual learner characteristics that are most important in modifying the teacher’s conception of the group. In other words, it is the observation of diversities within the classroom that feed back to adjust the theory, or modify the schema, about the group. With that perspective in mind, complexity theory may have something to offer as a useful framework for understanding this process. As Keene (2000) has suggested, the underlying tenet of complexity theory is that our world is a subjective reality that has resulted from our own interactions with our environment and with others; and our world is characterised by complex and adapting systems, such as the development of an adaptive theory about group preferences among the learners that we teach. The disorder in the world plays a significant role in developing our understanding and creation of order, such that order and disorder coexist, but Wheatleys (1999) notion of the strange attractor of meaning results in the observer being highly motivated to see meaning in the combination of order and disorder. This attention paid to the characteristics of individual learners as the basis on which schema are modified probably indicates a predominantly learner-centred approach on the part of VET

teachers who participated in this research. As Kember and Kwan (2000: 475) have observed, a learning-centred approach on the part of a teacher ‘...concentrates on the student and ensuring that appropriate learning takes place.’ In a learner-centred approach it is individuals who are seen as the most important unit, such that it is individuals who are observed and reflected upon. Accordingly, it is the similarities among individual learners that provide an initial sense of order, and their divergence from those similarities that yield a form of disorder. Together, the order and disorder are interpreted to provide for new meanings and understandings which, in turn, are further ‘tested’ to develop further order.

Conclusion

At least among the quite large sample of VET teachers who participated in this research there is much to be positive about. First, there was a broad commitment to the notion that individual differences among students are present, and legitimately expressed through learning styles and preferences. Second, these style and preference differences were identified in two domains (mode of presentation; contexts of learning) that have resonance in the research literature, and that are capable of analysis in classroom situations. Third, there was evidence that teachers had typically developed their own theories of style (largely seen as preferences) either without reference to established theory, or on a basis of a theory they were aware of and that had appeal to them. There was also evidence that teachers had developed processes for making identifications of preference within the two identified domains, as part of their ongoing teaching; and that they had devised ways of responding to those identifications at an individual and group level. In summarising those optimistic outcomes, it needs to be remembered that the sample was a largely self-selected one, and that a more randomised sample would likely yield less optimistic results than that.

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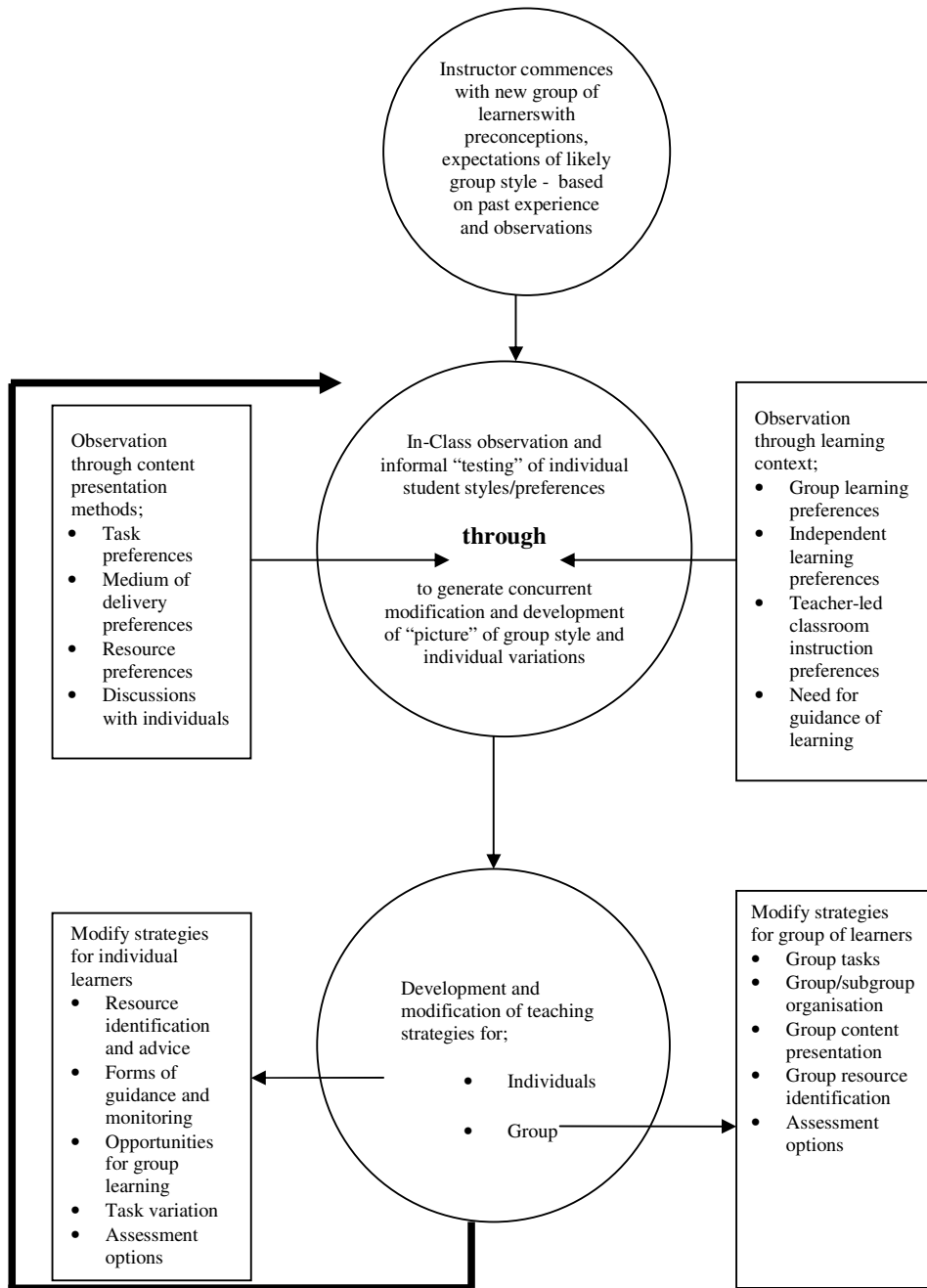


Figure 1: Model for a responsive and iterative pedagogy based on learner style/preferences (from Smith & Dalton, 2004).