

General practitioners and their learning styles

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SUMMARY. Continuing medical education sessions are often poorly attended by general practitioners. One reason may be that these traditionally consist of lectures by hospital consultants with a strong theoretical bias which may have little relevance to the learning needs of general practitioners. To compare the learning styles of teachers and learners in general practice, learning style questionnaires were administered to 50 hospital clinical tutors, 78 general practitioner trainers, 63 trainees and 47 non-trainer principals. The questionnaire covered four different learning preferences: activist, reflector, theorist and pragmatist. The findings showed that the learning styles of hospital tutors and general practitioner trainers were statistically significantly different to those of non-trainer principals and trainees. The tutors and trainers scored much higher on theorist styles and to a lesser extent on reflector and pragmatist styles. There were no significant differences on activist scores.

Since teachers tend to teach in their preferred learning style, which may not match the style of the recipients, these findings have implications for continuing medical education in general practice. These implications are discussed.

Introduction

MANY continuing medical education sessions are poorly attended by general practitioners and a variety of reasons have been offered for this. These include the fact that general practitioners are too busy, want to spend time with their families or prefer to learn by private reading. Keeping up to date is regarded by almost everyone as essential, so why is it that so many section 63 courses or sessions are not well attended? Furthermore, why is it that two people can attend the same educational session, yet one can find it stimulating and learn from it while the other is bored and learns nothing?

One problem is that continuing education for general practitioners traditionally consists of lectures given by hospital consultants. The input is theoretical, of high intellectual quality, concentrating on analysing and conceptualizing, but often has little relevance to the learning needs of the recipients. Clearly, any learning an individual receives must relate to the needs of that person and not to his or her needs as perceived by the teacher, and any learning experience is inefficient if it does not match the learning skills of the learner.

Kolb¹ devised an experiential learning theory in which he suggested that an individual first has an experience, follows that with the collection of data and observations and then analyses the data, finally modifying behaviour as a result of the experience. He suggested that every learning process goes through

this cycle of experience, followed by observation and reflection, then the formation of abstract concepts and generalizations, ending with the testing of the implications of these concepts in new situations. Kolb argued that people have strengths in one or more phases of this cycle. If they are strong in the first part he called them convergers, in the second, divergers, in the third, assimilators, and in the last phase, accommodators. He developed an inventory which allowed an individual to classify himself as having an emphasis on one or more of the four different learning abilities.¹

Kolb's inventory was felt by others to be an unreliable instrument² and Honey and Mumford in their *Manual of learning styles*³ extended the concept of the four styles, classifying individuals into four different learning preferences — activist, reflector, theorist and pragmatist — corresponding to Kolb's four basic styles. In brief, an activist is one who enjoys new experiences, but rapidly becomes bored with long term implementation; a reflector is one who prefers to consider all options carefully before acting and who collects data carefully and methodically; a theorist is one who likes analysing and constructing models to explain what is happening before acting; and a pragmatist is one who prefers experiences that have a practical value. The activist, for example, enjoys group work, participating and contributing to discussions; he or she tends, however, to jump in without thinking of the implications of his action. This would contrast with the reflector, who waits before contributing and will have at his fingertips all the relevant matter for the discussion yet may wait too long for his or her contribution to be appropriate.

It has been observed⁴ that teachers also tend to teach in their preferred learning style irrespective of the style of the learner, so the activist will feel more comfortable with group work, the theorist with lecturing, and so on. To study the relevance of this theory to general practice continuing education the learning styles of four groups of doctors — teachers and learners — were compared.

Method

Learning style questionnaires³ were given over a period of about a year to 50 hospital clinical tutors, 78 general practitioner trainers and 63 general practitioner trainees, all of whom attended various courses or seminars run by the authors. As a comparison, 100 non-trainer principals in Cornwall, selected randomly using a random numbers table, were mailed a learning style questionnaire to complete, and 47 of them returned their questionnaires.

Each learning style questionnaire consisted of 80 statements, 20 for each learning type, which the responder ticked or crossed for agreement or disagreement. Scores were calculated for each preferred style for each doctor by adding up the points (one point for a tick, none for a cross) for the questions assessing that particular style. Each style thus had a score range from one to 20. A question scoring for the activist style was one such as 'I actively seek out new experiences', one for the reflector style was 'I take care over the interpretation of data available to me and avoid jumping to conclusions'. Theorist style was tested by questions such as 'I can often see weaknesses and inconsistencies in other people's arguments', and the pragmatist style was looked at by a question such as 'What matters most is whether something works in practice'.

Multiple t-test comparisons can by chance produce a statistically significant result. The data were therefore analysed

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first by analysis of variance to determine whether variance in the data occurred because of variance in the data itself or because of a genuine difference between the data sets. In this case, analysis of variance was performed on four sets of data using the F-test.

Results

The means, standard deviations and ranges of scores for the four groups of doctors are shown on Table 1. Analysis of variance showed significant differences between the four sets of doctors for scores on all learning styles except activist. On Table 2 the critical regions provide a measure of the significance of the differences between the mean scores for pairs of groups on reflector, theorist and pragmatist styles.

Tables 1 and 2 show that the largest differences were on theorist style, where hospital tutors scored much higher than general practitioner trainees and non-trainer principals. General practitioner trainers also scored much higher than trainees on theorist style. Hospital tutors scored significantly higher than trainees and principals on reflector and pragmatist styles. Similarly, general practitioner trainers scored significantly higher than trainees and non-trainer principals (except for reflector styles for the latter). There were no significant differences on any styles between trainees and non-trainer principals. Hospital tutors and general practitioner trainers differed only on theorist style, where tutors scored significantly higher than trainers.

Discussion

People are not necessarily limited to one particular learning style, but usually show a dominance in one or two areas — Honey and Mumford's more recent studies³ suggested that 35% of individuals are dominant in one area, whereas 24% have two strong areas. The other 40% have styles evenly divided at a lower preference between all four styles. Dominance in one area does not necessarily mean there will be a corresponding weakness in the apparently opposite area — so, for example, a particularly strong theorist will not necessarily be weak in the active area, though it is difficult to see how an individual could be strongly active yet also be a strong reflector. In fact, no style is the direct opposite of any other style. They are part of a continuum, so any person may be in any one part of this continuum at any time during a learning experience.

Our study suggests that general practitioner trainers and hospital tutors come from one group of learning preferences,

Table 2. Significance of differences between mean scores for pairs of groups (activist differences were explainable on variance alone).

		Critical region	Significance
Hospital tutors — GP trainers	Reflector	1.076	NS
	Theorist	2.274	$P < 0.01$
	Pragmatist	0.205	NS
Hospital tutors — GP trainees	Reflector	2.924	$P < 0.001$
	Theorist	5.256	$P < 0.001$
	Pragmatist	2.359	$P < 0.01$
Hospital tutors — GP principals	Reflector	1.820	$P < 0.05$
	Theorist	3.349	$P < 0.001$
	Pragmatist	1.925	$P < 0.05$
GP trainers — GP trainees	Reflector	2.201	$P < 0.01$
	Theorist	3.313	$P < 0.001$
	Pragmatist	3.128	$P < 0.001$
GP trainers — GP principals	Reflector	1.085	NS
	Theorist	1.617	$P < 0.05$
	Pragmatist	2.442	$P < 0.01$
GP trainees — GP principals	Reflector	0.614	NS
	Theorist	0.987	NS
	Pragmatist	0.181	NS

NS = not significant.

with dominance in the reflector/theorist area, whereas general practitioner trainees and non-trainer principals come from a different group of predominantly reflector/pragmatists. These differences in learning preferences between the teachers and the learners were statistically significant, although the differences were not large. The range of scores in any group was also wide; for example, many individual general practitioner trainees were strong in the theorist style. Overall, however, the hospital tutors were stronger in that style than the trainees. The important point is that the learner may well have a different style from the teacher, and if this difference is not recognized, the teaching experience has a high chance of being unsatisfactory. Tutors and trainers with their theorist strengths need to recognize that trainees and non-trainer principals — with their pragmatist strengths — may not be inspired by the theoretical approach.

Table 1. Comparison of mean scores on learning styles for the four groups of doctors.

	Activist	Reflector	Theorist	Pragmatist
<i>Hospital tutors (n = 50)</i>				
Mean (SD) score	8.98 (4.10)	14.52 (3.67)	13.64 (3.29)	13.16 (3.37)
Range	3–16	5–20	6–19	5–20
<i>GP trainers (n = 78)</i>				
Mean (SD) score	9.71 (3.42)	13.82 (3.46)	12.26 (3.44)	13.28 (2.89)
Range	1–19	3–19	1–19	6–17
<i>GP trainees (n = 63)</i>				
Mean (SD) score	10.10 (3.45)	12.48 (3.70)	10.40 (3.21)	11.74 (2.92)
Range	3–18	3–20	4–19	4–18
<i>Non-trainer GP principals (n = 47)</i>				
Mean (SD) score	7.94 (3.33)	12.98 (4.58)	11.11 (4.08)	11.85 (3.33)
Range	2–15	3–20	1–18	4–18
<i>Analysis of variance</i>				
	F = 2.26, NS	F = 3.00, $P < 0.05$	F = 7.86, $P < 0.001$	F = 2.88, $P < 0.05$

SD = standard deviation. NS = not significant.

In many areas, where general practitioner clinical tutors are yet to be appointed, continuing education for general practitioners is still predominantly in the hands of hospital clinical tutors. Given these differences in the styles of the average general practitioner and hospital tutor, continuing education may not be presented in the most effective form for the learner. This may inhibit attendance by general practitioners and actually discourage learning. From this study, it would seem inappropriate for hospital based tutors to be deciding on content and style of continuing education for general practitioners.

It is widely recognized that continuing education is not hitting its target. Instead of criticizing the learners for not attending courses provided for them, the diet which is offered should be studied. Bearing in mind that teachers teach in their dominant learning styles,⁴ evidence is presented here that hospital tutors — the main providers of traditional medical education — have learning styles which are somewhat different from those of the non-training principal and the trainee. The time has now come to reappraise continuing education from the point of view of the learner. Courses should be provided, the teaching styles of which match the learning styles of the participants, rather than the preferred style of the teacher.

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