EDUCATION AND LEARNING

Personal development plans and self-directed learning for healthcare professionals: are they evidence based?

Stephen F Jennings

The UK chief medical officer’s recommendations for the re-licensing and performance management of doctors will mean a move from a formative towards a summative role for appraisal and its adjunct, the personal development plan. Where does this leave medical educators trying to promote reflective learning? It is taken for granted that self-directed learning is the sine qua non of adult learning. But is it? This review re-evaluates self-directed learning and its corollary, the personal development plan, in the light of the chief medical officer’s report, seeking the evidence behind today’s accepted educational practice. It discovers a reality which challenges assumptions long enshrined in medical education.

Until now, UK doctors have had no obligation to demonstrate their continuing fitness to practise. In calling for National Health Service developmental appraisal to measure performance and become the basis for re-licensure, the chief medical officer (CMO) has effectively moved the personal development plan (PDP) into the minimum standards arena and called into question its use as a formative development tool. This literature review suggests he may be right.

Grant and Stanton’s influential 1999 review into the effectiveness of continuing professional development called for a focus on the process, based on individual needs. This resulted in the reforms of appraisal and the PDP, now contractual requirements for most UK doctors, who will often be familiar with them through their training schemes. But the PDP diverts the focus from process to content. It can be argued that by restricting study to the items on the plan, it promotes prescriptive over experiential learning. Tutors have subsequently attempted to increase medical professionals’ control of their learning by making it an object of reflection. This may work for some, but not all. Candy pointed out in 1991: “There may be limited transfer of self-directed competence from one context to the next and the pursuit of generalised strategies is probably ill advised and foredoomed.” Is self-directed learning so important? Is there any evidence that PDPs are effective?

WHAT IS SELF-DIRECTED LEARNING?
All adults learn; 80–100% of adults engage in some form of learning activity throughout their lives, but only 20% of these do so in a formal educational setting. Knowles defined self-directed learning as a process in which individuals take the initiative in diagnosing their learning needs, designing learning experiences, locating resources and evaluating their learning. From fashioning a coracle, to the Socratic method of thinking for oneself, it implies a high order cognitive activity, and one which distinguishes the adult learner from the child and adolescent. But in enunciating the assumptions of andragogy (“the art and science of helping adults learn”) Knowles inadvertently heralded a new philosophy, setting Freire’s Pedagogy of the oppressed in a logical theoretical framework; adult educators searching for a professional identity seized upon his unproven assumptions as axioms which took self-directed learning as the sine qua non of all adult learning. But is it?

WHAT SELF-DIRECTED LEARNING IS NOT
Self-directed learning is not a philosophy, nor is it a set of techniques to be applied by an institution wanting to teach a self-directed programme. It is an internalised process related to motivation and self-identity, something that happens within a person, not something that is done to them. Where is the evidence for this? Tough confirmed that when adults decide to learn they first invest time and energy in checking the potential benefits; as Knowles put it, “Learners need to know why they need to know”. But Tough also found that those adults devalue their work if not validated by some external authority. Hence the rational for Brookfield’s principle of effective facilitation; the self-directed-learner must be supported and reassured. Yet it is he who points out that this has now become unchallenged academic orthodoxy.

WHY ARE SOME LEARNERS MORE SELF-DIRECTED THAN OTHERS?
Since there are many alternative models (table 1), why must it be necessary or even desirable for adults to be self-directed in order to learn? Brookfield points out that self-directed learning alone has less successful outcomes than a mix of self-directed learning and group learning. If all adults are self-directed, why are some more self-directed than others? What factors determine how self-directed an individual is?

In his own literature review, Candy found that a number of paired traits had been associated with
the ideal of self-directedness—for example, logical/analytical, curious/open, reflective/self aware—suggesting that it was not a feature of every adult learner. Andragogy would have teachers attempt to develop these traits in learners, to make them more self-directed. Teachers can encourage curiosity, but can they make someone more open-minded, more logical? The work of Jung \(^{32}\) and Myers \(^{33}\) suggested this might depend more on behavioural types.

**DOES SELF-DIRECTION DEPEND ON LEARNING STYLE?**

In Kolb's model of experiential learning, learners choose how to acquire information (either concretely through the senses or abstractly by analysing) and process it (reflectively by watching or actively by doing); hence the learning style inventory \(^{25}\) and the learning cycle. \(^{26}\) To Honey and Mumford \(^{27}\) Kolb’s assimilators became refector-theorists; accommodators became activist-pragmatists, etc (fig 1).

To Riding and Cheema \(^{28}\) and Rayner \(^{29}\) the key was not learning style but cognitive style. This develops between 6 and 9 years old, not in adolescence. \(^{30}\) Curry showed how these may be related, with cognitive style more deeply embedded than learning style. \(^{31}\) Baker et al. \(^{32}\) Allinson et al \(^{33}\) and Robinson \(^{34}\) linked a propensity to take risks with the activist/accommodator-converger styles. Reflector/assimilator-divergers have some preference for lectures and non-group activities; they deliberately exclude themselves from risk. Could it be that they are therefore more self-directed? In 1984 Pratt \(^{35}\) enunciated what many had already assumed, that self-directed learning is associated with autonomy—that is, with Witkin’s (1949) “field-independent” thinkers. \(^{36}\) These field-independents have close connections with the reflector/assimilator-divergent learning style. It was therefore a logical deduction, and one that fitted nicely with the aspirations of adult educators, that self-directed learners would tend to be reflectors, and therefore in order to support learners in becoming more self-directed, they should be encouraged to adopt a more reflective style. In spite of its undeniable logic, common sense and convenience, this deduction was spurious. \(^{4}\) Brookfield had already demonstrated the reverse. \(^{17}\)

In work later corroborated by Thiel, \(^{34}\) Brookfield had looked at real, successful self-directed adult learners and found they were more likely to be field-dependent, heuristic, activist-accommodators. The key was that these were extrinsically motivated and gregarious, willing to network in order to problem solve. The autonomous field-independent/reflectors kept themselves to themselves and sought less help. Although field-dependent/activist-pragmatists looked to others to mediate their learning, they possessed the single most important “measure of self-direction” \(^{19}\) —their ability to act on their critical reflection. The reflectors merely reflected. As Eva discussed in an editorial in 2005, the key determinants of self-direction might not be learning style, nor indeed personality type, but the meta-cognitive processes that determine both. \(^{41}\)

**IS CURRENT PRACTICE EVIDENCE BASED?**

Why then, 20 years after Brookfield pointed all this out, are health professionals being forced to use PDPs to “become more reflective” when this could demotivate the most self-directed? True, Brookfield says they need support—just not in this way. Could it be that medical educators have reluctantly accepted this practice, because the alternatives in maintaining medical competence are too draconian? Or is the heuristic, trial and error approach, for millennia the mainstay of scientific advance, hard to justify in 21st century medico-legal terms?

The canon of evidence on self-directed learning in healthcare is legion, but much of it is not directly comparable since “experts” mean different things by self-directed learning. The

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### Table 1 Learner-centred models of learning

| **Self-efficacy** | In an extension to Tough’s work, Bandura \(^{12}\) used the term “self-efficacy” to describe the judgements people make, sound or unwise, of their ability to deal with situations, before commencing them. Their actions depend on these judgements, which are informed, in order of importance by knowledge of their previous performance, observing others, encouragement of others and physiological state. In this model, self efficacy can be raised or lowered by early success or failure. It has evolutionary advantage, not necessarily linked to truth. |
| **Reflective thinking** | For Dewey \(^{14}\) the route to genuine freedom was based on five steps: suggestions for a solution lead to clarification of the problem, formation of hypotheses, reasoning on the meaning of the possible hypotheses, testing the hypotheses. |
| **Experiential learning** | Critical reflection on experience, plus the formulation of new hypotheses which are then tested by further action, in circuits of the learning cycle (Kolb \(^{15}\)), so giving meaning to learning (Mesorow \(^{16}\)). But based on Rogers \(^{17}\) for whom the essential characteristics were personal involvement, self initiation, pervasive stimulation of feelings and cognitive aspects of personality; perceived as satisfying a need (Maslow?). |
| **Reflective practice** | For Schön \(^{18}\) theory based competence in “zones of mastery” is modified practically by the unexpected. It has two components: “reflection in action” with immediate modification of practice, based on integration of the new learning with past experience, and subsequent “reflection on action” to develop “zones of artistry” by anticipating the unanticipated. |
| **Redefinition** | Danis and Tremblay \(^{19}\) challenged the importance of the learning cycle and suggested that random determinants could be more significant in successful learning than evaluation and planning. They found that many self taught adults have a heuristic approach to learning, constantly redefining their objectives without any predetermined patterns, and without consciously identifying their learning needs. That does not mean that they do not reflect, simply that they may need to reflect for much shorter periods than others (see Schön \(^{18}\) above). Some of the best learning occurred due to fascination, not to solve problems. |
| **Staged self-direction** | Grow \(^{20}\) points out that learners are not empty vessels waiting to be filled, but respond in different ways to the stream of knowledge and its flow. |
| **Recurrent** | Recursive teaching \(^{21}\) accepts the reality of looping from one matched stage to another and back again, as appropriate to the topic, time available or student experience and expectation. The corollary is recursive learning—learners iteratively use a mixture of styles and techniques as appropriate. |

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**Figure 1 Kolb’s experiential learning styles are in black, Honey and Mumford’s in red. Adapted from Robinson.** \(^{34}\)
basic model se
self-management of learning; (4) self-determination of
(''teach-yourself'', or the independent pursuit of learning). The
self-direction as method or process: (1) the degree of control a
learner has over the mode of instruction; (2) autodidaxy
(''teach-yourself'', or the independent pursuit of learning). The
next two are concerned with self-direction as outcome or goal:
(3) self-management of learning; (4) self-determination of
destiny.

Each domain can be represented as the change in control
over time (for example, the instructional domain shown in
fig 3).

SIX PROBLEMS

Dittman54 points out that some educators (for example, Marbeau55) wrongly assumed that simply “doing self-directed
learning” at an instructional or autodidactic level leads to
autonomy (fig 4), and that these four different but overlapping
domains can be superimposed chronologically on the simplistic
model (for example, Davis and Thompson56).

In reality these occur randomly (fig 5), as different people
operate in different domains at different times in their lives, as
a result of their upbringing, previous learning experiences and
the “organising circumstances” over which they have little
control.47 So they will choose to be more or less self-directed
depending upon their constructions and their confidence in a
particular subject at a particular time.48 In other words, self-
directed learning is context specific.49

Second, given that self-directed learning is context specific, it
is learners’ experiences that are important in any research, not
their test results, since those may vary with the context.
Qualitative studies are therefore most suitable for all but the
instructional domain of this relativist topic.49 Yet they are
swamped by quantitative ones.50 51 Meta-analyses only com-
pound the error.

Third, research conclusions from studies in one domain alone
are applied erroneously as evidence across all domains—for
example, randomised controlled studies comparing traditional
teaching approaches with specific techniques that allow the
learner a small degree of choice, are valid only in the

WHY PERSONAL DEVELOPMENT PLANS?

The PDP was already out of date when introduced in the UK,
based on an entirely fallacious understanding of self-directed

Figure 2 A simple model of self-direction. Adapted from Candy.2

Table 2 Four domains of “self-direction”

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<td>Method/process</td>
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<td>1 Learner control</td>
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learning, and discredited by Frewin in 1976.\textsuperscript{77} The plan stemmed from Flanagan’s 1970 assertion\textsuperscript{78} that “a self-directed learner should have a reasonable degree of skill and decision making in planning, which should include… the ability to analyse and define problems and prepare a sequential plan using a clear statement of desired outcomes and working back to obtain a definite schedule and a set of procedures for determining the required progress at each point.” Indeed she should. But to paraphrase Candy, what if she is not a reflector with mechanical, linear and analytical cognitive processes? What use is this plan to her? It sits in a drawer, giving the impression that the mandate to ensure the doctor’s competence has been filled,\textsuperscript{79} but is in reality redundant. Evans\textsuperscript{80} suggested PDPs were well received by 80% of GPs, influencing their development and quality of patient care, but the study predicted UK national appraisal and those GPs chosen had elected to use a PDP, suggesting that this appealed to their learning preferences. Subsequent studies which reduced sample bias are more circumspect\textsuperscript{81}; 50% of GPs regard PDPs as hoops to be jumped.\textsuperscript{82} Their mechanistic production devalues the self-directed element of formative appraisal.\textsuperscript{83, 84}

The concept of the self-directed learner is more complex than fitting a simple reflective model. People’s propensity to control their own learning is not necessarily determined by increasing their reflective abilities, but by meta-cognitive processes which depend upon personality type, learning style preference, cognitive style, past experiences, situation pertaining, subject studied, acquired competencies, or all or none of these. A PDP may help or hinder.\textsuperscript{85} For doctors who proceed heuristically, lapping the learning cycle many times a day, planning learning a year in advance is demotivating as well as pointless, due to the sense of inadequacy engendered. But these may well be self-directed learners. They are not unsafe practitioners. Schön’s “reflection-in-action” (table 1) is not only more relevant for them, but may be more important than “reflection-on-action” generally, for it occurs at the coal face of decision making. We may know what we should do in a situation, but it is what we actually do that affects patients. Bandura’s judgements in self-efficacy (table 1) are influenced by heuristics.\textsuperscript{86} Appraisal and reflective practice, as currently advocated across all health professions, emphasise reflection-on-action and ignore reflection-in-action, and we know that doctors are bad at identifying their own weaknesses when they do reflect-on-action.\textsuperscript{87, 88} They are not unique; self-belief is a selective advantage\textsuperscript{89} and this casts doubt on the relevance of self-assessment. Does it really address unconscious incompetence? Although reflection-in-action can be unconscious it appears to involve a stepping up of cognitive resources\textsuperscript{90} and is modifiable.\textsuperscript{91} Patients’ unmet needs (PUNS) and doctors’ educational needs (DENS) attempt to crystallise the immediacy of this reflection-in-action. Reflection-on-action is still important yet the paradox of the PDP is that it is potentially a useful learning tool for those to whom it holds least appeal but who need a structured approach-wholist activist/pragmatists, who tend to include on it tasks they have already completed; it is probably of no use to those analyst/theorist-reflectors who have their own more detailed portfolio anyway, but quite enjoy filling in the PDP. At worst, it is counterproductive for the enthusiastic obsessive who fails to complete an unrealistic self-delegated agenda.

If it is to remain, the PDP will need to be short term, tailored to the individual and incorporating strategic challenges, not just in order to appeal to the activist learner but because, as Björk has shown,\textsuperscript{92} “desirable difficulties” increase the accuracy of self-assessment, which nicely fits the cognitive research\textsuperscript{93} as well as Freire’s praxis.\textsuperscript{94} The beauty of self-directed learning is that even without a PDP, it overrides all these complex issues and opts, by definition, for the most appropriate route to personal learning, although still requiring support. But without that PDP, how can the facilitator determine what has or will be learned? Herein lies the rub: the PDP probably has more use to educators and assessors, than learners.
The evidence base on self-directed learning

- There is no evidence that self-directed learning leads to autonomy
- Research conclusions are being applied erroneously
- Learners’ experiences are key, not their results
- Restricting learner-control has no part in self-directed learning
- Doctors are incapable of accurately assessing their learning needs
- There is no evidence that self-directed learning improves outcomes But…
- Self-directed learning is high quality learning

ALTERNATIVES?

Grant has subsequently pointed out that needs assessment alone can stifle creative learning and does not improve outcomes unless in the appropriate context.25 She also reasserts the findings of Davis86 and Bandara and Calvert87 that doctors already have their own, if flawed, ways of assessing their needs and asks if these should be the starting point of new systems for formative professional improvement.

The focus for the immediate future needs to be on the individual, not the process or content. As Asadoorian and Batty state,9 we need facilitation based on the needs of the individual, and tailored to individual preference, using personalised tools ascertained from each individual appraisal. Lyons has called for a system that considers individuals’ learning and cognitive styles;9 We need to inculcate “personalised, surgery-based climates of enquiry”. We need qualitative research into the value individuals derive from the process, into individual, and tailored to individual preference, using perso-

CONCLUSION

The aims of andragogy and self-directed learning were honourable. They should be pursued in a reasoned, informed, evidence-based fashion in continuing medical education, acknowledging complexity and avoiding unsubstantiated claims, academic orthodoxy and political expedience. Let the right research questions be asked and the right research methods be used. Let what has already been written be read again carefully, to distinguish fact from fiction. Let there be a sound basis for the support of self-directed health professionals.

Conflict of interest: none stated

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Key references


Further reading


Personal developments plans (PDPs)

- PDPs are founded on a misconception
- The practice of promoting reflective learning via PDPs is not evidence based
- The PDP is probably more useful to the facilitator than the learner
- A PDP is not essential for successful self-directed learning

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