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Promoting self-efficacy through affective feedback and feedforward

John Cowan
The Open University, UK

Abstract

Research in the past 25 years has established a relationship between self-efficacy and attendant academic performance. These findings are critically summarised. Their implications for possible enhancement of current tutorial practice, in the form of feedback or feedforward or both, are considered. Particular attention is devoted to learners' affective needs and to learner/tutor relationships.

Keywords: self-efficacy; affective needs; performance; feedback; feedforward; tutoring.

1. Introduction

Sometimes Scots, disdainful of the hospitality offered to them, may describe their meal as ‘cauld kail het’ - meaning yesterday’s soup reheated: I am concerned lest the title of this article and a quick inspection of the bibliography may provoke a similar reaction. I hope that, in this brief introduction, I can persuade tutors who are already committed to offering feedback and feedforward to their students to revisit that practice with me, in the light of relatively recent research into self-efficacy and its relationship with academic performance. Hence this brief opening tale:

I had been providing online tutoring to Taiwanese undergraduate students of English as a foreign language. My remit was to develop their critical thinking abilities, and my experiences had varied in effectiveness. I worked with three similar class groups. In year 1, I had concentrated on identifying for the group the strengths of the better postings, and explaining what was admirable about them; this feedback had had only slight discernable impact on the students' reasoned thinking, judged by pertinent outcomes. In year 2, I had concentrated on individual postings with potential, and suggested how the writer or a peer could enhance them on the public discussion board; this feedforward was only somewhat more effective than the previous year's feedback. Finally, in year 3, I contacted individual students directly, encouraging them to overcome their reservations and fears, to take risks, and to try to be the best they could be in their postings. Deducing and responding to affective needs had occasioned a striking improvement (Chen et al., 2014).
While writing up these experiences, I chanced on Bandura's work on self-efficacy (Bandura, 1977; 1993; 1997) and its relationship with performance. It dawned on me that, somewhat like Moli**ère's** M. Jourdain, I had been nurturing self-efficacy in Taiwan and previously (Cowan, 2013) - without knowing that I had been doing so. The findings in the literature of the past 30 years about how to promote self-efficacy effectively overlapped with much tutorial literature regarding feedback and feedforward, with which I was familiar. In particular, I found noteworthy mention of the affect amidst the reports of the likely positive effect of supportive tutorial contact on both self-efficacy and performance. In what follows, I summarise and share the lessons that I have taken as an active tutor from these studies of self-efficacy, feedback and feedforward.

2. What is known about self-efficacy?

2.1 Definition

Self-efficacy is the strength of one's belief in one's ability to complete specific and designated tasks and reach attendant standards. It is generally held to be domain specific, context sensitive and task specific (Bandura, 1986; Schunk, 1989b).

2.2 Educational relevance

The core of self-efficacy is the sincere belief at the time that one has, or has not, the skills, knowledge and ability to succeed in a particular forthcoming task (Bandura, 1997). Researchers (Margolis & McCabe, 2006) claim to have shown that subjects with such beliefs depend upon a self-system through which they exercise some internal control over their motivation, thoughts, feelings - and their response to a current task. Conversely, how people judge their performance can inform and hence alter their self-beliefs, through what Bandura called reciprocal determinism (Bandura, 1986), recognising that a person's behaviour both influences, and is influenced by, personal factors and the social environment.

2.3 Relationship to performance

Research has established that self-efficacy and performance are at least correlated. There is less evidence to demonstrate causality, although there may well be some undefined causal factor that simultaneously boosts both self-efficacy and performance.

Whatever the relationship, the value of a learner's perception of self-efficacy, prior to engagement with a task, often predicts their level of performance in that task (Pajares, 1997). Significant correlations have been reported between prior identification of self-efficacy and subsequent problem-solving (Schunk & Hanson, 1985; Schunk et al., 1987; Mone et al., 1995; Meier et al., 1984). Collins (1982) reported that self-efficacy predicted achievement for various levels of student ability, without necessarily establishing a causal relationship. Schunk (1991) reported that, where disabled children set their own goals, higher levels of both self-efficacy and skill ensued - which at least indicated correlation. Pintrich and Schunk (1996) wrote, carefully, that school children 'who had stronger self-efficacy beliefs were able to master various math and reading tasks better than students with weaker efficacy beliefs.'

The relationship has rarely been demonstrated as directly causal. Even Margolis (2005) only wrote reservedly of the 'probability' that increased self-efficacy will lead inter alia to

meaningful academic gains. Nevertheless Pajares (1997) found it noteworthy that there had been a proliferation of reported findings in which self-efficacy beliefs were apparently predictive - especially in regard to school pupils studying mathematical topics. Bandura staunchly maintained that, even when the learning context features limited opportunities and powerful constraints, those with strong belief in their efficacy will ingeniously devise ways to gain some control (Bandura, 1993). However Schunk (1991) expressed the reasonable reservation that high levels of self-efficacy would not necessarily result in competent and adequate performance, should the requisite skills be lacking. Moreover some reports suggest the existence of other relevant factors also affecting performance.

2.4 Factors related to self-efficacy

Self-efficacy is a generative and multi-faceted capability over which a reflective individual can exercise some control and influence (Bandura, 1993). At any given time, an individual's level of self-efficacy is determined by an inferential process wherein they identify and balance the combined influences of personal and situational factors. Levels of self-efficacy prior to their undertaking of a particular task will thus vary with their aptitude and prior experience (Schunk, 1991); the learners' perceptions of their ability and of the difficulty of the imminent task; the effort they have recently had to expend on similar tasks and the assistance that they then received; their consequent successes and failures (Margolis, 2005); and the credibility of anyone who has offered them feedback or feedforward (Schunk, 1989b).

2.5 Influence of models

Understandably, individuals will attune their judgement of self-efficacy by reflectively comparing themselves with others (models), choice of whom will influence their consequent self-efficacy rating (Bandura, 1993). Schunk and Hanson (1985) compared children's observation of peer coping, peer mastery, and teacher models with no-observation of models. Observing peer models generally but not always led to more increase in self-efficacy and skill than did observing teacher models. The same researchers reported later (Schunk & Hanson, 1989) that listening to protocol tapes of self-modelling (self-recorded commentaries describing thought processes as they are happening) highlighted progress in skills development, and so enhanced self-efficacy.

2.6 Emotional self-efficacy

Emotional self-efficacy is a person's judgement of their capacity to process emotional matters accurately and effectively. Using three established instruments in their preliminary study of student teachers, Goroshit and Hen (2014) found significant correlations between empathy, teacher self-efficacy and emotional self-efficacy. Saarni (1999) for example, reported that emotional self-efficacy is important for the individual's self-confidence, ability to set challenging goals and perseverance on the way to realise these goals (Saarni, 1999).

2.7 Characteristics of learners with high self-efficacy

Bandura (1993) summarised the association of extreme levels of perceived self-efficacy with aspects of cognitive development and functioning, and outlined ways in which efficacy impacts on personal accomplishment. Others have supported some of his findings, as noted below.

Learners with a strong sense of self-efficacy generally:

- Direct themselves effectively.
- Use cognitive and metacognitive strategies (Pintrich & Garcia, 1991).
- Maintain strong motivation to increasingly challenging goals (Pajares, 1997).
- Sustain effort when they perceive the prospect of failure.
- Persist longer - and achieve more (Schunk, 1991; Margolis, 2005).
- Regard difficult tasks as challenges, not as threats (Pajares, 1997).
- Quickly recover positive efficacy after setbacks.
- Are confident of their ability to control threatening situations.
- Attribute failure to insufficient effort, or to deficiencies in knowledge or skills that can be acquired.

2.8 Characteristics of learners with low self-efficacy

In contrast, Bandura (1993), and others as noted, found that those with a low sense of self-efficacy will often:

- Formulate self-fulfilling prophecies of failure (Margolis & McCabe, 2006).
- Struggle to establish motivation (Margolis & McCabe, 2006).
- Have low aspirations and weak commitment.

- Avoid difficult tasks (Margolis, 2005), perceived as threats.
- Fail to persist in tasks which they fear (Bandura, 1986).
- Focus on self-diagnosis rather than on successful performance.
- Dwell on their personal deficiencies.
- Slacken off effort or give up in face of difficulties (Margolis, 2005).
- Ascribe inadequate performance to low ability.
- Only recover efficacy slowly (if at all) after a setback.
- Lose faith in their capabilities after failure, shutting down emotionally.
- Experience stress and depression.

The incidence of matters of the affect in the above items is thought pertinent to the current inquiry. Goleman (1995) wrote tellingly of how temperament can be tempered by experience, and of how optimism and hope, like helplessness and despair, can be developed in the sense of self-efficacy. Lehman et al. (2008) found that, 'with the exception of happiness, it is not the basic emotions that are prominent during learning, but the affective states of confusion, frustration and anxiety." They stressed the need to research students' affective states during learning, to inform and enhance pedagogy.

2.9 What should course designers and tutors take from this?

Judgements of self-efficacy relate to specific and imminent tasks; there is certainly a relationship between self-efficacy and performance, although whether or not this is causal is debatable. Nevertheless enhanced self-efficacy has generally been found in association with enhanced performance, which can then further strengthen self-efficacy. Furthermore, such self-efficacy has generally been determined before the performances with which it has been correlated, which renders it unlikely to be the fruit of wisdom by hindsight. Additionally some relevant behavioural needs and influences appear to be affective in nature.

However, much of the research into the relationship between self-efficacy and performance has been undertaken with subjects of school age and with multiple areas of research interest. And there are some grounds for suspecting that enhanced self-efficacy is not the only factor associated with performance changes. The quality or absence of remedial tuition, and in some cultures parental influence, are only two such factors. Nevertheless the next section concentrates on practical measures suggested by this research to enhance self-efficacy.

3. How can learners' self-efficacy be promoted?

3.1 First hand experiences of mastery

Personal experience of mastery, or lack of it, will usually have a direct effect on self-efficacy (Bandura, 1986). Learners will perceive their successes (or failures) as a consequence of such factors as ability, effort, task difficulty, and luck (Weiner, 1985). Such self-evaluations consequently influence their formulation or re-formulation of their judgements of self-efficacy. Naturally success on a task which the learner rated was easy will not enhance their self-efficacy as strongly as would success on one they judge to have been difficult (Schunk, 1991). Margolis (2005) therefore suggested:

- Arranging a progression of study demands for struggling learners.
- Coordinating supportive tutoring with the in-class curriculum.
- Frequently and promptly providing academic feedback.
- Severally commending and rewarding effort, progress and success.
- Reviewing, and even graphing, of progress.
- Helping learners to credit successes to some such factors as effort, persistence, modifiable abilities and appropriate use of suitable strategies.
- Avoiding direct reference to abilities that struggling learners believe are immutable and incapable of improvement.

Kline et al. (1991) summarised this advice as telling learners what they have done that was satisfactory, why it was so, what was unsatisfactory and in what ways, and suggesting how they might improve performance.

3.2 Vicarious experiences of performance

Acquaintance with a significant behavioural model, to whom the learner can relate, can promote influential self-beliefs (Brown, 1978; Schunk, 1983). Knowledge and appreciation of how their peers perform can help learners to develop appreciation of their own capabilities (Schunk, 1989b).

Margolis (2005) suggested:

- Modelling targeted skills and concepts.
- Making self-modelling and comparison videos.
- Using similar others to provide an effective basis for comparisons (Schunk, 1991).
- Developing trust and respect, so that persuasive comments by models or others are believed.

3.3 Persuasion by others

Pajares (1997) found that feedback giving reasoned credit to ability has a strong effect on self-efficacy and performance. Exposure to judgements of one's performance by tutors or others will admittedly nurture self-efficacy less strongly than experience of mastery, at first hand or even vicariously. Nonetheless comment from tutor or peer can also influence the development of self-beliefs - provided it does not take the form described precisely by many writers (including Pajares and Bandura) as ‘knee-jerk praise or empty inspirational homilies’ (Bandura, 1997). The judgements and advice from others must be credible as well as relevant. Shallow assurances may lead to a loss of self-esteem (Sutton & Gill, 2010), by being taken as indirect commentary on the learner's failings, and hence compromising their 'ontological security' (Giddens, 1991).

Margolis (2005) suggested feedback:

- Giving immediate attention to errors.
- Relating current activities to past successes and to strategies that learners have demonstrably mastered.
- Developing high credibility and influence with struggling learners.
- Avoiding ‘stroking’ that is transparently shallow and lacking authenticity.

3.4 Physiological considerations

Anxiety, stress, arousal, fatigue, and mood states can powerfully influence physiological states that are primarily of the learner's own making (Bandura, 1997; Pajares, 1997) and so intrude upon intellectual functioning and self-efficacy judgements (Zimmerman, 1995). Beliefs about efficacy reciprocally influence stress, anxiety and depression. Those who impose upon themselves unattainable standards of self-worth, or who are unable to control their ruminative thoughts, can even induce depression (Bandura, 1993).

Margolis (2005) explicitly suggested that teachers should:

- Consciously design instruction to reduce undue anxiety.
- Encourage in all learners a sense of personal control.
- Offer relaxation training.

3.5 What should course designers and tutors take from this?

Margolis and McCabe (2006) distinguish between teachers' deciding what they should do, and what they should say. 'What to do?' centres upon arranging enactive mastery through gaining relevant experience of, and confidence from, doing a task or job successfully, or observing vicarious experiences of someone of similar ability. 'What to say?' concentrates on verbal interaction and persuasion. If both are combined, the pairing becomes yet more powerful.

In considering what to do, *c*ourse designers should:

- Avoid overly demanding tasks, as excessive effort causes fatigue, may provoke fear of failure, and be taken as a sign of personal inadequacy (Pintrich & Schunk, 2002).
- Plan that demand and support progress throughout the course, so that planned and actual progress resonate.
- Suggest when and why to use both new and previously learned strategies, and encourage their correct use in forthcoming tasks.
- Offer students acceptable and meaningful choice of content and method, as a major motivator for consequent learning (Pintrich & Schunk, 2002).
- Arrange opportunities for learners with low self-efficacy to observe peer models working successfully on targeted tasks, especially if these models attribute any failure to controllable factors and modifiable abilities.

In considering what to say, tutors should:

- Give frequent, immediate, focused, and task-specific feedback, mapping what struggling learners did successfully and what they can do next time to improve.
- Initially provide extrinsic reinforcers, and then gradually phase them out.

- Use and differentiate between five types and purposes of teacher-directed feedback (Salend, 2001). These are corrective feedback (showing how to correct mistakes); prompting feedback (to help in the correction of mistakes); process feedback (when most of an answer is correct); instructive feedback (providing additional information); and praising (when legitimately earned).
- Optimistically but sincerely tell learners when success is possible if they make the effort and use an appropriate strategy.
- Reinforce both effort and correct use of strategy in their on-going contacts with learners. Stress recent successes, comparing them with previous work, and even recording progress on a chart (Alberto & Troutman, 2003).

4. Feedback and feedforward for self-efficacy

Both feedback and feedforward are directly relevant to the formulation of self-efficacy. These interactions between tutors and students cover individual or mutual analysis and evaluation of recent performance, and can point forward to potential enhancement in forthcoming tasks.

4.1 Feedback

4.1.1 What is generally known about effective feedback?

Academic feedback is the reporting to learners of the strengths and weaknesses of their completed work or performance. Sadler summarised the potential of feedback for learning and development:

> Students use it to monitor the strengths and weaknesses of their performance, so that aspects associated with success or high quality can be recognised and reinforced, and unsatisfactory aspects modified or improved. Sadler (1989).

Salend (2001) has highlighted the need for different forms and styles of feedback to accommodate various tutorial purposes (subsection 3.5). Whatever the purpose, if feedback is to be effective, it must be given soon after the work has been completed (Gibbs, 1988). Learners who then possess and exercise a sound concept of the desired standard can have and take an opportunity through appropriate reflective action to judge their work and the corresponding feedback against this standard (Sadler, 1989). They can

then respond to the feedback as they have interpreted it (Higgins, Hartley, & Skelton, 2001).

Some findings cast doubt on the impact of receipt of feedback on subsequent performance. Researchers have reported that some students are only concerned with their mark or grade, and not with the accompanying feedback (Wotjas, 1998; Duncan, 2007; Burns & Foo, 2014; Falchikov, 1995; Gibbs & Simpson, 2002). Crisp (2007) found 'only limited support for the idea that students respond to feedback by making changes' consistent with the feedback. Taras (2003) found it effective to arrange learners' joint discussions with their tutor of their feedback comments, before grading was declared. Black et al (2003) reported that, as a result of comment-only marking followed by personal dialogue with the marker, students put more effort into their work. Murtagh and Baker (2009) described how students were asked to respond to their tutors' written comments on assignments in a tightly structured one-to-one tutorial, centred on discussion of the feedback. Sutton and Gill (2010) further stressed the desirability of communicating individual feedback through a tutor/student relationship in which the tutor expresses care through the provision of bespoke responses, which are personalised yet not personal (Murphy & Cornell, 2010).

However such arrangements can create tension for tutors between their roles as instructor and as academic developer, within which asymmetrical power/knowledge relationship there is always significant struggle for identity in a wider unequal world order (Sutton & Gill, 2010). With this in mind, Higgins et al. (2001) strongly advocated that tutor and student need to directly address issues of discourse, identity, power, control and social relationships. Alternatively social persuasion can be nurtured online by involving students in reading peers' postings and writing quality responses to them, as is done nowadays in many Massive Open Online courses (MOOCs). Thus a sense of community within which focused praise and pertinent questioning can encourage higher level thinking can be established.

4.1.2 Emotional needs and feedback

Burns and Foo (2014) asked students about their immediate feelings regarding feedback. Like Carless (2007), they encountered a range of emotional responses including sadness, disappointment and increased confidence. Having one-to-one dialogue between student and tutor at such times is highly valued by students (Murtagh & Baker, 2009; Arkoudis & Tran, 2010; Taras, 2003; Higgins et al., 2001) as a key to unlock development of their

feelings and perceptions, and consequently enhance their utilisation of the feedback (Murphy & Cornell, 2010). Allocating time to reassurance and follow-up questions is likely to respond to the emotional needs of the student (Burns & Foo, 2014). However such a relationship can prove inherently difficult for both parties, in several respects (Murphy & Cornell, 2010). For even the provision of frank and objective feedback can be 'obscured by emotional static' (Chanock, 2000), which render desirable and tempered conditions unduly and unhelpfully tense.

4.1.3 Feedback and self-efficacy

The principal contribution of feedback towards enhanced self-efficacy and performance is in objectively establishing the desired standards and the scope for enhancement - if driven by positive self-efficacy. Receiving formative feedback can increase students' confidence. Certainly feedback on early successes in a programme can enhance learning efficacy (Schunk, 1991), for students can develop their self-efficacy by appreciating how they learn best. Feedback on ability has more effect at this time than feedback on effort or on combined ability and effort (Schunk, 1983a). But if feedback is delayed and disappointing, it can have a destructive effect on self-efficacy (Nicol & MacFarlane-Dick, 2006).

4.2 Feedforward

Academic feedforward (Sadler, 1989) comprises constructive advice that is formulated and communicated by a credible message-giver, and offered with intention to strengthen what the learner will next undertake. Current usage commonly locates feedforward as the closing stage in a guidance and feedforward loop (Hounsell et al., 2008). They describe this loop as jointly dependent on judgements made by marking tutors, on students' understanding of these, and on students' effective assimilation of the advice they are offered.

4.2.1 What is generally known about effective feedforward?

The concept and value of feedforward are fairly widely acknowledged (Bloxham & Boyd, 2007) and advocated by reasoned rationale (Higgins et al., 2001). It has long been claimed to have significant and consistently positive effects on student learning (Black & Wiliam, 1998), so that it nominally features nowadays as a declared priority for many tutors. It need not preclude explicit feedback, as it can incorporate the judgment on which both feedback and feedforward are based. Indeed the additional reporting of recent grades can be a helpful supplementary component of feedforward provided care is taken to

highlight what students can do to improve their work (Black & Wiliam, 1998; Sutton & Gill, 2010), no doubt partly through clarifying and emphasising standards.

Ten years ago Rushton (2005) deplored the fact that the paradigm shift which claims to recognise the value of feedforward in formative assessments is unaccompanied by evidence that the shift in practice has featured in reality, and has been shown to be effective. More recent literature and conference presentations are certainly rich in enthusiastic but vaguely detailed mentions of feedforward. While these generally offer earnest practitioners' testimony endorsing its value, they are seldom in this writer's experience accompanied by evidence from student evaluations and comparative studies of learning.

4.2.2 Emotional needs and feedforward

Part of the focus in constructive feedforward can profitably be devoted to addressing learners' affective needs. As already reported, these can include lack of self-confidence, frustration, apprehension, fatigue and uncertainty. Yet this aspect of feedforward has received little attention in the literature. Admittedly George et al. (2004) dealt with it specifically in the case of access students, stressing how important it had been found to address the affective agendas carried by such students. Additionally Chiu (Chiu, 2009; Chiu & Cowan, 2009) has written about her concentration on 'shepherd leadership' (McCormick & Davenport, 2004) as an effective feedforward approach for engaging with her Asian students' affective needs. A Western approach to the same situation and its affective needs was described by Chen, Chou and Cowan (2014). Overall, however, affective themes feature sparsely in the literature dealing with feedback and feedforward. One noteworthy exception to that was Gibbs (1988), who made a strong case for an account of feelings at the time to feature in personal debriefing of reflections on action

4.2.3 Feedforward and self-efficacy

Self-efficacy is a belief, founded on feelings about expected or hoped for performance. While partly informed by objective reasoning, it clearly has a strong affective component in which confidence, fears, hopes, risk taking and uncertainty will feature. It thus seems evident that these should feature significantly and explicitly in comprehensive feedforward, although Cowan's decision (Chen et al., 2014) to concentrate his feedforward on perceived affective needs may have accorded them undue emphasis. Of course, one problem in dealing with affective needs is the reluctance of students to declare them,

although they are often ready to confirm a tutor's perception, once it is privately declared to them.

Addressing self-efficacy was (and still is) featured in the UK Open University's (OU) arrangements for commenting on a marked assignment. The advice long given to OU tutors has been to provide feedback through their initial comments on the body of the tutor-marked assignment (TMA) itself, and in the covering form. They should thus use that form to 'begin with positive comments on the strong points of the TMA indicating, emphasising and building upon the strengths' and giving an explanation of the score awarded. This should be followed by 'constructive criticism if required, giving examples of weaknesses and how to overcome them'. These final four words encapsulate the expectation that the tutor will provide helpful suggestions (feedforward) about how the next assignment might be approached to produce work of a higher standard. This advice is to be sandwiched between the opening feedback and the recommended and transparently affective 'high note and encouragement' that should be offered in conclusion. The widespread and highly regarded OU model, providing combined feedback and feedforward for all students, is current practice in that university. Yet research into student reactions, reported over 25 years ago by Gibbs (1988), suggests that little attention is devoted by recipients to anything other than the grade and associated affective reassurance and encouragement. Notice, additionally, that the recommended feedforward implicitly and in practice usually concentrates on responding to the cognitive demands of the task in hand. The affective needs and possibilities emerging from the self-efficacy research are not specifically identified as matters for tutorial attention.

4.3 What should course designers and tutors take from this?

4.3.1 Programme and task design

Programme designers are excellently placed to enhance the self-efficacy of struggling learners. They can arrange for positive experience of mastery (enactive mastery) in a context of moderately demanding standards by setting clear tasks with positive instructions for students, and providing for positive feedback responses thereafter. Students should thus find themselves able to understand the content of their learning, to identify the results of their actions, and to build upon these results to further develop their capability and on-going self-efficacy (Bandura, 1977). Perceived failure in one's direct, personal accomplishments will weaken self-efficacy, just as success will strengthen it (Pintrich &

Schunk, 2002; Margolis, 2005). Planning for learners to have a progression of successful and valued mastery experiences should therefore be a priority for designers and tutors. The choice of goals is important in regard to the promotion of self-efficacy. An attractive goal, linked to the belief that it is attainable, motivates learners to respond (Schunk, 1991). Explicit and moderately challenging goals enhance and sustain motivation (Locke & Latham, 1990).

To a great extent, levels of self-efficacy will depend on learners' interpretations of their recent successes and the extent to which they take credit for them (Pintrich & Schunk, 2002). In this respect, forthcoming goals that embody specifically stated performance standards will promote on-going self-efficacy and motivation better than distant goals (Schunk, 1991). Learners will be sooner and better able to discern progress, and to set themselves feasible future goals, thus leading to enhancement of their self-efficacy and skills (Schunk, 1985).

If a programme successfully commends proven strategies to learners, this can enhance their motivation and self-efficacy, according to the extent to which the strategy use improves performance on task. (Corno, 1983; Pintrich & De Groot, 1990; Zimmerman & Martinez-Pons, 1990). Planning provision to provide cues signalling how well the learner is doing will also enhance motivation, provided the learner does well.

4.3.2 Tutorial relationships

The tutor/student relationship in which the facilitative tutor seeks to ‘nudge’ (Bruner, 1986) the learner forward into their Zone of Proximal Development (Vygotsky, 1986) has been adopted and found effective at every level in education (Rogers, 1983). In a recent paper, O'Dwyer (2012) has pointedly reminded her readers of the three features of supportive tuition advocated by Rogers in his person-centred approach. According to Rogers, the necessary qualities of the helping or caring person in such a relationship are unconditional acceptance, empathy and realness. These seem particularly pertinent to the concern of this paper with the pro-active promotion of positive self-efficacy and its attendant capacity for growth enhancement.

Rogers claimed that self-acceptance is the key to personal change and development, since once we accept ourselves as we are, then we can change. Being unconditionally accepted by another facilitates the emergence and strengthening of the real self, and hence raises levels of self-efficacy. This can emerge through experiencing attentive

empathic listening that embodies care and solicitude, sensing and giving attention to the learner's inner thoughts and feelings and to the personal meanings that are being expressed. When the learner has been listened to and heard, matters that seemed to be insoluble become soluble. As such a relationship develops, a tutor may even find themselves willing to be ‘real’, exposing their own vulnerabilities as well as their strengths, and so creating ‘a hitherto suppressed freedom of genuine expression and being in another.’ Within all such empathic and congruent relationships, trust - in both directions - is vital: unconditional positive regard then ensures that self-efficacy can receive helpful and appropriate attention.

The recommendations in the present paper seem to presume this type of tutor/student relationship and envisage its extension into facilitative relationships between peers, as for example in Francis and Cowan (2008) and Chen, Chiu and Cowan (2014). For it is advantageous for learners to be in an environment where they engage closely with positive and encouraging role models, thereby learning what high efficacy beliefs look and feel like (Schunk & Hanson, 1985; Relich, 1986).

4.4 Needed research

The General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995) was created to assess perceived self-efficacy. It is usually self-administered and comprises 10 items rated on a 4-point scale. It has been used internationally for more than two decades. Initiatives now could well use this instrument in projects where tertiary learners become action researchers of their own processes of learning development, ascertaining the contribution of self-efficacy to that progression.

A range of research questions has emerged almost naturally from this review and is somewhat urgent in view of the desirability of generalising findings and advice. In particular:

- To what extent are findings obtained for school-age students replicated in studies of self-efficacy and performance for undergraduates?
- What is the effect of learners' awareness of the relationship between self-efficacy and performance on the enhancement of both?
- And, finally and most important here, to what extent are findings from self-efficacy research generalisable and transferable?

5. Overall conclusions

This review has concentrated on self-efficacy, affective needs and tutor/student relationships around feedback and feedforward. It has generated some new and valuable insights on the effective enhancement of academic performance, which are that:

- A relationship has frequently been found between self-efficacy and level of academic performance;
- Whether or not this is a directly causal relationship, tutors can expect that efforts which consciously plan to raise self-efficacy are likely to be accompanied by enhancement of academic performance;
- Effective promotion of self-efficacy and performance will originate from timely and objective feedback, if it is considered by tutors and learners with deliberately constructive intent;
- Promotion of self-efficacy and performance will be nurtured by appropriately planned and expressed feedforward;
- Such feedforward should take full account and give attention to learners' affective needs, by building relationships with tutors and peers in which affective needs receive due individual attention.

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Author Details

John Cowan is Emeritus Professor of Learning Development of the UK Open University. In his advancing years, his tutoring and teaching are mainly online, with his current research interest concentrating on the particular demands of student-centred learning and autonomy within the Community of Inquiry (CoI) framework. He has long been an advocate of constructive feedforward, with considerable emphasis on affective learning needs.