

# **Engaging from the inside: Reflections on the value of social cognitive theory for learning in online discussions**

Susan Greener<sup>1</sup>, Pericles Asher Rospigliosi<sup>1</sup> and Dr Simon Shurville<sup>2</sup>

<sup>1</sup> University of Brighton Business School, Brighton, UK

<sup>2</sup> Royal Military College, Cranfield University, UK

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**Contact:**

Sue Greener  
Brighton Business School  
University of Brighton  
Mithras House  
Lewes Road  
Brighton BN2 4AT  
E-Mail: [s.l.greener@brighton.ac.uk](mailto:s.l.greener@brighton.ac.uk)

## **Abstract**

Bandura's work on Social Cognitive Theory (1986; 1989) offers a number of concepts which resonate with the experience of learning in online discussion boards. His triadic reciprocal determinism model of interactions between an individual's thinking and emotional state, their behaviour and their environment, grew from his earlier work in child development psychology. He argued that we are in control of our actions to a greater extent than many current Higher Education learners may recognise.

Our experience of students' use of discussion boards in Virtual Learning Environments (VLEs) has led to frequent frustration with the level of interaction and meaning construction, producing instead opportunities for hidden individual learning (Kanuka and Anderson 1998) but less evidence of academic debate than we would like. Yet the unique archiving potential of developing thought and ideas and the potential plasticity of the online discussion to accommodate varied learning strategies (Greener 2007) spur us on as teachers to strive for better ways to motivate and engage learners in this activity. As teachers we have some years' experience of moderating online discussion at different academic levels for undergraduate and postgraduate students. We recognise opportunities from Bandura's work on modelling, self-efficacy and self-direction to explore these issues from an HE teacher's perspective, from inside the experience of asynchronous discussion.

This paper will explore what Bandura has to offer online teachers on these issues through the use of a series of structured reflections, prompting us to make sense of them and construct further opportunities to learn (Moon 2000 page 38). The reflective approaches used allow the authors to explore personal anchors and mindsets, (Jacobs 2005; Sergiovanni 1986), frames (Bolman and Deal 1997) to reflect on the wider context, and a repertory grid approach (Pedler, Burgoyne et al. 1994) to propose further research.

**Keywords:** asynchronous conferencing, social cognitive theory, reflection

## **1. Introduction**

Bandura identifies “self-reflection” as a uniquely human ability, making it a vital part of his Social Cognitive Theory (SCT) (1986); he saw it as a way in which people could think, learn and take control of their own actions. At the time, this was part of his reaction against the constraints of prevailing behaviourist theories, which suggested that individuals were at the mercy of external stimuli and deep-seated inner drives. Today in Higher Education (HE), we use reflection as an essential learning tool, encouraging students to review what they are taught, what they read and what they learn from experience, to develop their own constructions of this knowledge. What better tool, then, for HE teachers to use, in order to explore the relevance of SCT to asynchronous online discussion in a virtual learning environment (VLE).

In this paper we set out our understanding of Social Cognitive Theory in relation to the concept of online discussion boards in a VLE. We outline the practical experience of discussion boards as an experiential base for reflection. We then explain the systematic reflective techniques used to explore online discussion in relation to Bandura’s view of social cognition and learning. Finally we summarise the findings of our systematic reflections, drawing out key ideas for further research.

## **2. Social cognitive theory**

Bandura’s Social Cognitive Theory considers the power of human agency in life’s achievements, beliefs and outcomes (1986). In proposing reciprocal determinism among personal emotional and cognitive factors, actual behaviour and the environment in which this happens, he describes a complex feedback mechanism. What people believe about their capabilities, what they see other people achieving around them, (and how they identify with those people), how they assess prior performance of tasks, their estimation of the skills and knowledge they possess, and the community in which tasks are to be achieved, all these factors will interact. The outcomes affect choices of what will be undertaken, how people feel about approaching the task, and how much effort they are likely to put into it.

"People's level of motivation, affective states, and actions are based more on what they believe than on what is objectively true."

(Bandura 1997 p2)

The concept of self-efficacy, the extent to which an individual believes s/he is capable of an action, and its role in self-regulatory strategies, is increasingly discussed in relation to learning in formal education and in particular online learning, away from the teacher's physical presence and a situation requiring more autonomy on the part of the learner (Artino and Stephens 2006).

SCT clearly emphasizes the social impact of others' behaviour for vicarious learning, showing that attention given to others' behaviour is affected by the observer's perceptions of similarities or differences between the observer and the actor (e.g. gender, age, status, attractiveness etc). If attention is achieved, this observed behaviour is retained in memory by the observer's ability to symbolize, making sense of the action and relating this to their own relationship to the action (e.g. past experience or skills and knowledge required). Reproduction of this behaviour is compared with the retained memory of that observed behaviour. Whether the modeled behaviour is reproduced will be mediated by incentives (or disincentives) from the external environment, from the actor, the individual's self-efficacy beliefs or other influences in that environment, as well as the individual's emotional and physiological state.

Why should this theory be useful in an understanding of online discussion for learning? The social dynamics of an online discussion board throw the individual into visible focus in their group relationships. The learner has autonomy to interact or not, although there may be academic incentives for this, through assessment, structured tasks and a level of enthusiasm for the subject of discussion. The theory may help us to understand a complex interaction, involving vicarious learning, in which self-efficacy may affect behaviour in the discussion board.

### **3. The online discussion board – a context for reflection**

“...it is only through active intervention of a teacher that a powerful communications tool such as collaborative computer conferencing, or cooperative learning becomes a useful instructional and learning resource.”

(Anderson, Rourke et al. 2001 p5).

This study is based on Greener’s experience of using discussion boards in a UK Higher Education Institution (HEI) for final year undergraduate and postgraduate learning. The VLE used was Blackboard™, which allows multiple asynchronous threaded discussion boards to be created within module and course areas. The nine boards, on which this study will focus, were created and moderated over a period from one to five years, including two moderated at course level, as a meeting place online for different cohorts on a part-time postgraduate degree, the rest all relating to specific course modules. Size of groups using the boards ranged from 6 to 40 students and most involved part-time students. Some boards complemented classroom sessions, others were designed in blended mode to alternate with classroom sessions, supported by guided reading and online materials.

The discussion boards were created and moderated for different purposes, for example: sharing critical analysis of literature, sharing professional experience and discussing this in relation to theory, communication amongst students on different cohorts as a network for sharing ideas, best practice, and professional news, and to encourage learning around module assessment. All boards were introduced and moderated with the intention of promoting learning, rather than as social spaces.

Discussion boards have been used for learning, rather than administrative or social purposes, because they allow the teacher to facilitate learner development (Ryan, Freeman et al. 2000) adding value to the experience of the classroom. While we acknowledge the resource arguments for increased online activity, we have sought extra pedagogic value from these tools, not just replacement of face-to-face activity. Increasingly, asynchronous discussion boards are becoming one of many tools, through which learners and teachers

can interact, some of which (e.g. wikis and blogs) can offer much more control to students over their learning. However our practical experience is that we have not yet plumbed the depths of what simple threaded message boards have to offer the learner and teacher, hence this reflection.

#### **4. Reflection as a technique for knowledge construction**

Why should we reflect? We reflect as part of our natural thinking behaviours (Hall's "everyday reflective practice" (1997)) as part of what makes us human. From a pedagogical perspective, Schon (1987) emphasizes the ideas of "reflection in action" and "reflection on action", distinguishing between that which is done in the midst of action and can alter our responses and behaviours in real time, and that which takes place after an action is completed, where new views of reality can be made, producing post facto learning. Here reflection takes on a purposive flavour, a tradition, which includes Dewey and Habermas advocating a deliberate and systematic approach to reflection (Dewey 1997; Morrison 1995).

It is this purposive approach to reflection, which can underpin transformational learning (Mezirow 1978; Moon 2000) and develop knowledge (Dewey 1997), which we use here as part of our reflection on moderating discussion boards. Hall describes a second level of reflectiveness, in the context of Higher Education, as requiring commitment and deliberate activity to review and develop practice (including journal writing, talking with a critical friend and focus group discussions) (1997). Her third level of reflectiveness is associated with programme and project work in educational practice. Our approach takes the systematic element from Hall's third level of reflectiveness and combines this with commitment and explicit attempts to capture and create knowledge, which appear at her second level. Drawing on creative techniques of "force fit" (Proctor 1995) we apply deliberate systematic techniques for reflection, to help us reflect on a specific, relevant theory in relation to our experience of online discussion boards. The intention is to focus on the production of new thinking from past experience combined with specific theoretical insight.

## **5. Systematic reflective methods used in this paper**

### *5.1 Theories of practice, personal anchors and mindsets*

We have chosen techniques to offer differing reflective perspectives. We begin with a reflection on personal anchors and mindsets, based on a practical approach described by Jacobs (2005) advocated by professional practitioners Sergiovanni (1986) and Aviolo (1999). This structured reflection starts with “practice episodes”, characterised by intentions, actions and realities, which stimulate reflection. Underneath the practice episodes sit “theories of practice”. These have something in common with Schon’s “reflection-in-action”, in that they usually guide practice episodes unconsciously but may be called upon for scrutiny during an episode, as if we were consulting a second self to determine our next move based on all knowledge and belief accumulated to date. Theories of practice include what Jacobs refers to as “mindsets and platforms for action” – the instant self-guide in times of need, mindsets based on a personal accumulation of beliefs, assumptions, knowledge gained from planned learning events and emergent knowledge gained from experience.

The deeper layer in this analysis comprises personal beliefs or anchors, called by Jacobs “antecedents”. These stem from our personal educational background, but also our social, religious, economic and historical background, which will have affected our formation as individuals. We add to these antecedents, elements such as our self-knowledge, tacit knowledge and understanding, the way we have made sense of life in the past. This technique will surface assumptions about teaching and learning philosophy consciously and unconsciously used in moderation of discussion boards.

### *5.2 Frames (Bolman and Deal 1997)*

The second systematic reflection uses four frames or perspectives to question experience. These frames ask similar questions about emerging problems and underpinning issues but from structural, human resources, political and symbolic frames. Questions are about problems found, evidence for them and constructive changes proposed, but force the

reflection to take on board the organizational or system context of the events – in this case the use of online discussion boards, rather than the personal thinking and attitudes revealed.

### *5.3 Backwards Review (Pedler, Burgoyne et al. 1994)*

This reflective exercise offers a mechanical sequence of steps, which make reflection on personal characteristic behaviours accessible, i.e. bringing them into awareness and questioning them. This is done by identifying a number of meaningful events on which to reflect – here experiences of nine discussion boards. The second step picks three of these events at random. The first, and each subsequent, group of three events is compared to find dimensions of difference, which relate two of the events but exclude a third. For example, we identified one of these dimensions of difference as the amount of active moderation. The extremes of each dimension are simply labelled A or B. This process is iterated until at least 6 dimensions of difference are identified, all of which are then set out in table format and each event is coded A or B on each dimension.

The final two steps compare row patterns of As and Bs looking for relationships, especially identity or mirror image, then analyse what these patterns could mean. This process can be time-consuming and sometimes furnish relatively little analysis, although revisiting the dimensions and adding to or adapting them may yield further information. This reflective technique can focus on the specific detail of events and bring to light patterns of behaviour which were previously unnoticed.

## **6. Reflection on personal anchors and mindsets**

The “practice episodes” in this reflection were the nine discussion boards detailed above, although much of this part of the reflection is based on those (7) of the boards we moderated. Reflecting on the intentions associated with these boards, we produced the list in table 1 below.

Table 1: Reflections on intentions for the pedagogic use of online discussion boards

<b>Connection and communication</b>	
1	Sharing details of professional experience to broaden students' knowledge
2	Sharing and developing understanding of ideas and theories from the curriculum, including the opportunity to ask questions after class
3	Student / student communication outside the classroom
4	Student / teacher communication in a whole group outside the classroom, rather than by individual emails
<b>Self directed learning</b>	
5	Construction of personal ideas, developing personal insights, through challenge and debate
6	Encouraging student leadership of discussion
7	Facilitating student choice in when and where they could participate in discussion
<b>Development of academic and professional knowledge</b>	
8	Sharing academic references, and comments on them, relevant to class topics
9	Opening up issues of student interest or professional concern for academic review
10	Encouraging students to make their understanding of an idea explicit through writing which is visible to all
11	Recording discussion, references and critical analysis of topics for student revision
<b>Personalising support</b>	
12	Allowing the teacher to understand student perceptions of issues on curriculum and current work concerns
13	Allowing the teacher to use dialogic discourse to guide learning and/or to correct ideas which may not be helpful to the student
<b>Role modelling academic behaviours</b>	
14	Allowing the teacher to raise questions related to theory which are rooted in students' practical comments or concerns
15	Allowing the teacher to demonstrate critical analysis in detail beyond the classroom
<b>Develop pedagogical understanding and knowledge</b>	
16	Allowing students and teachers to continue and to introduce new material to discussions started in classroom time
17	Allowing the teacher to identify areas in which specific students need further support

“Theories of practice” associated with our roles in these boards reflected our enthusiasm for the medium and its potential to contribute to learning alongside face-to-face teaching, together with a strong commitment to student support beyond the classroom. Our self-efficacy beliefs come from our excitement at opportunities for learning from asynchronous discussion, which we have experienced as stimulating knowledge construction and opportunities for quick access to learning resources, which can expand the curriculum and add currency to the learning context (Rospigliosi, Shurville et al. 2004). Our constructionist beliefs have supported efforts to develop an online environment for our students, which gives them space and more control over discussions than in class (while recognizing that control in discussion boards is still heavily with the moderator and may not feel so empowering to the students). Sharing pioneering experiences with other academic staff, as we experiment with the affordances of VLEs (Conole and Dyke 2004) and good practice in moderation (Salmon 2000), has supported us through disappointments with initial attempts at engaging debate online, providing models which, given our teaching beliefs, have caused us to persist and devote extra effort to the process of improving learning opportunities from online discussion.

Such vicarious learning within the academic “enthusiast” community, together with our personal interests in technology and fairly high self-efficacy beliefs, have led us to pioneer and adapt new ways of running boards. We have to restrain this enthusiasm from suggesting that the self-efficacy beliefs of our students are likely to mirror our own. Students’ theories of practice will be affected by their experience of using discussion boards, which for mature students in 2007 is still often limited, although this is likely to change rapidly with widespread use of such boards for social as well as academic purposes.

The student experience of technology, achieving access and overcoming inevitable obstacles in accessing VLEs from home and work, are potential incentives or disincentives in Bandura’s terms, mediating opportunities for vicarious learning. The online environment is uncomfortable for some, particularly when the academic tasks involved are not well understood, producing an emotional obstacle to contributions in online boards, as well as

fear of exposing possible lack of knowledge. This feedback could lead to a student mindset associated with low self-efficacy online.

Reflecting on the antecedents of such theories of practice for academics and for students using discussion boards, can we learn about personal anchors and self-beliefs? For students, this reflection focus could well be the object of further research. We can hazard guesses at our own beliefs, which have led to a keenness to experiment with technology and a desire to support students beyond a lecturing mode. We associate this with passionate beliefs about the centrality of learning in living, a rather holistic view of what learning is about – encouraging and giving value to learning experiences from wide sources beyond but including the academic, professional and pragmatic, as well as theoretical, learning preferences. The authors have all worked outside academe and bring an eclectic and applied perspective, which values a deep search for understanding but dislikes rigid, time-honoured processes for achieving that understanding. This suggests that reciprocal determinism of environment, behaviours and personal factors has considerably affected our self-beliefs and theories of practice with regard to online learning.

## **7. Reflection from differing frames**

Bolman and Deal's frames provide a helpful way of reflecting on the wider context of the use of online discussion boards in HE learning and teaching and their relation with Social Cognitive Theory. Using each frame, we asked questions about problems experienced, evidence of them and constructive approaches to change.

From a structural frame, the problems encountered were technical. The VLE constrained how discussion boards were encountered and entered by students, the layout determining which elements of the discussion were visible at any one time, and how easy or difficult it was to respond to different postings or start new threads. We also experienced technical constraints when running multiple boards for groups within a cohort of students, involving more time accessing boards than was productive. When institutions adopt a standard commercial VLE, the benefits of consistency for users and support can be great, but the constraints of particular software are a major irritant for academics and learning

technologists alike. The students' rarely distinguish between what can be "solved" by academics and what could only be solved by a software revision, and this can reflect negatively on their perceptions of the environment as a place to learn.

From a human resources frame, academic staff have often ignored the potential value of online discussion for pedagogic purposes, preferring to use them for spontaneous queries, and using consequent low usage to confirm their beliefs that discussion boards are unsuitable for learning; once again showing feedback in action. The "educational innovators" (Wilson and Lowry 2000) among academic staff have tended to move on to more exciting and adaptable social software as it has become available, with its offer of greater student control and intervention, while those left behind have often treated VLEs as administrative tools rather than pedagogic ones.

Reflecting on the political frame of discussion board use was a challenge, because a political frame looks at a wider context and there is already much literature around institutional readiness for online learning environments, and best practice guidelines on how best to adopt VLEs (for example O'Leary 2002). In the authors' experience, discussion boards have become to some university sub-cultures a no-go area, being associated in academics' minds with extra work and poor quality of posting. This acceptance of early experience as closure may seem extraordinary, but the adoption of new technology will always be affected strongly by issues of ease-of-use and perceived benefits of use (Moore 1991).

From a wider political perspective, the use of online discussion boards can be one part of an empowerment strategy for the learner, as discussed by Stokes, who sees a potential for changing power relations between learner and teacher through such online discussion (1996). This fits with some of the pedagogic intentions outlined above for discussion boards, but the software and time constraints experienced by academics limit real potential.

Finally the symbolic frame reflection produced ideas around the vision of the institution in using VLEs, but also the learning and teaching strategies of academic teams around courses. Boards which focused on applying theory to experience, developing vocational

skill range and problem-based learning were most likely to support online discussion, whether through asynchronous boards or other software tools. Discussion boards which seemed to support learners best towards these objectives involved active moderation from staff, who did not make simplistic assumptions about digital preparedness of students and simply behaved as good teachers online: clarifying, supporting, challenging, modeling appropriate behaviours and giving clear feedback (Chickering and Ehrmann 1996). Where there was no moderation, there was often a negative experience of online discussion. Where discussion was mentioned during face-to-face classes, debates taken further between face-to-face and online events, points raised in online discussion boards publicly within the class, these behaviours led to positive feedback and improved participation and constructive contribution.

## **8. Reflection from a critical incident repertory grid**

Eleven dimensions of difference were identified including the length of board life and the degree of academic task focus. Close associations were found between the volume, frequency and length of postings and the degree of structure or task focus of the board. For all the boards used in this example the purpose of the board was clear, but students were seen to respond better to a particular task such as discussion questions set in reading or class, critiquing a particular article or researching, sharing and discussing experience of a particular phenomenon e.g. diversity legislation in the workforce or recent moves in a stock market.

There was a relatively low association between these proxies for high board usage and size of group. This could suggest that the size factor was unrelated to board activity, or that group size alone is insufficient to encourage high use of the board.

There was a close association between high board usage and the specifying of tasks which appeared more “academic” in nature, which suggests that students will take part in such boards more frequently when they rate the academic value of the activity. The more “social” or “administrative” the board appears to be, the less likely this board is to attract a

large number or frequency of postings. The students' perception of the academic value of discussion boards should be investigated in relation to enthusiasm or reluctance to post.

We could also suggest that the posting activity will be more structured when academic tasks are proposed. It may seem obvious that academics are better at structuring academic tasks than social or administrative ones. However, academics may need to understand more clearly what they expect from discussion board activity. It is useless to be disappointed at low levels of activity on a board when a clearly structured and valid academic task is not designed and communicated to students.

We expected the frequency of response postings would be associated with the level of challenge and dispute on the boards, particularly where the board is intended for discussion rather than student visibility, and we would expect a high level of dispute to cause a large number of response postings. This happened only two thirds of the time. Could we speculate that the well-discussed lack of non-verbal cues, which we often need and certainly use to maintain conversation and argument are depressing the continuation of debate online? This is a question worthy of research if we expect constructivist and dialogic approaches to learning to be achieved through logical argument.

Response postings, a form of sustained conversation, do not seem to be affected by active moderation, and since this involves frequent response postings and invitations to further debate, there is no noticeable role modelling effect here. We must also accept that, in addition to the role of non-verbal cues, self-efficacy and underpinning knowledge could be at work here.

## **9. Conclusions and actions**

This reflective paper is intended to offer ideas for debate, which have arisen from systematic reflection on our experience of discussion boards. We have found ideas which could usefully be researched through both an academic staff and student perspective, and which may be usefully extended to a non-academic context where threaded discussion is used in the workplace.

These ideas include the relevance of Bandura's Social Cognitive Theory to help us understand the feedback mechanisms in an online discussion board. We have tried to understand how individuals feel and think when communicating through text online, how their emotional state as well as their cognitive capabilities, their self-efficacy beliefs and their own and others' online behaviours, and the environment layout and usability itself, along with incentives for academic activity, can interact and influence what students actually write, its frequency and its learning value. The theory suggests we need to focus more clearly on the conditions, which set up self-efficacy beliefs, and that we can take control by understanding better how this feedback mechanism works.

We have identified a range of potential aims for discussion boards, which include the plasticity and archiving nature of text-based discussion as well as offering targeted communication and feedback in a social learning context. We have explored the nature of personal anchors, which may differentiate us from academics, who are less keen to adopt discussion boards. This reflection suggests another line of research into how other academics perceive discussion boards and the barriers and stimulants to using them.

The frames reflection identified external constraints and motivators for the use of discussion boards, as this activity must be situated within its environmental context. Our needs for continually updated expertise and help from technology specialists, together with the political, software and institutional constraints experienced, present a context for board moderation, which needs wider understanding within HEIs.

The repertory grid reflection produced insights into what makes people post online, in particular suggesting a divergence between a passive or administrative use of discussion boards and an actively moderated board with clearly designed tasks of perceived academic value and structure, which is likely to be associated with greater pedagogical benefit. Further research exploring the perceptions of learners and moderators could add value to existing guidelines for moderation and best practice in online discussion. We have picked up issues relating to sustained online conversation including size of group, lack of cues, possible explanations for low response postings etc, which should be validated by further

research. Our reflection has not taken us into themes such as the enabling of those with lower level language skills and the impact of student choice on when and where to take part in online discussion – we acknowledge these issues as relevant to a discussion of asynchronous conferencing and welcome further contributions to our understanding of online discussion through the presentation of this conference paper.

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