

REVIEWING AND THINKING THE AFFECT/COGNITION RELATION

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This paper is a theoretical discussion about learning. In it the core question of learning is first reviewed, assessed, then reworked to offer a new sensibility about what it is that prompts us to learn. Central to the reframing is the affective domain and the role that affect plays in learner outcomes. Our intent is to develop a theory of learning that foregrounds the non-rational and often unexplained aspects of learning. The general strategy taken draws upon the work of Lacan and uses that framework and language for developing a coherent explanation of some affective aspects of learning that are ordinarily overlooked in mathematics education.

INTRODUCTION

This paper is a theoretical discussion about learning. In it the core question of learning is first reviewed, then rethought and reframed to offer a new sensibility about what it is that prompts us to learn. Theoretical insights about learning are not new in mathematics education and an enduring history has mapped out robust explanations about what it is that prompts us to take up new ideas. The approach taken in this paper takes as its central plank the affective domain and the role that affect plays in learner outcomes. Going against the grain of much contemporary scholarly work on affect (see Hannula, Evans, Philippou, & Zan, 2004), we look at one way in which the affect/cognition is currently being worked through within social science. In arguing for the usefulness of our approach for learning theory, we contend that it offers a fresh and helpful way to explain the relationship between the individual and the social. Arguably the approach presents a challenge to classic ideas about learning, yet the potential of such work to move forward current understandings of learning is not to be underestimated.

Research interest in the affective domain has proceeded through quite different theoretical viewpoints. Characterisations of affect are inclusive of “a wide range of beliefs, feelings and moods that are generally regarded as going beyond the domain of cognition” (McLeod, 1992, p. 576). Those characterisations go by the name of: anguish, anxiety, attitudes, autonomy, beliefs, confidence, curiosity, disaffection, dislike, emotions, enthusiasm, fear, feelings, frustration, hostility, interest, intuition, moods, panic, perseverance, sadness, satisfaction, self-concept, self-efficacy, suffering, tension, viewpoint and worry. All these categories have come under scrutiny (e.g., Goldin, 2000; Hannula, 2002; Ma, 1999; Martinez & Martinez, 2003;

McLeod, 1992) and from those investigations important conclusions have been drawn with respect to the affect/cognition relation.

Contrary to McLeod's (1992) contention that research on affect lacks a strong theoretical basis we believe that what we are witnessing now is a plethora of groundings, drawn from theories of discursive practice (e.g., Evans, 2000; Walshaw, 2004a), of embodiment (Dodge & Reid, 2000), of somatic markers (e.g., Brown & Reid, 2004), of neuroscience (Schlöglmann, 2002), of representation (e.g., Goldin, 2000), and of situated practice (e.g., Lave, 1988). We develop our own theory of affect using Lacanian ideas, in the hope that it might contribute towards the centering, rather than the marginalisation, of research on affect within the field. A Lacanian treatment like ours is not entirely foreign in mathematics education (see Breen, 2000; Brown, Hardy & Wilson, 1993; Cabral, 2004; Evans, 2000; Walshaw, 2004b) and our work builds on that recent tradition.

IDEAS ABOUT LEARNING

Learning in mathematics education is by no means a unified theory. In attempting to produce a rigorous method and a satisfactory explanation of learning, theorists have proceeded with different emphases from alternative starting points and have often been in contest with one another. Since Gagné's (1965) classic interpretation of learning as behavioral change, new paradigms, influenced by cross-disciplinary practices, have tended to problematise conditions of learning as 'holding good' for learners, irrespective of the learner's history, interests and circumstances. Yet for all the inclusiveness in this exacting scholarship, the new paradigms tend to overlook affective aspects that we consider fundamental to the pedagogical encounter.

In the constructivist approaches influenced by Piaget and the post-Piagetian work of von Glasersfeld, it is the autonomous individual, and more specifically, the individual's developing internal representation within the mind (Goldin & Shteingold, 2001) that becomes the central unit of analysis. Drawing on humanist sensibilities about the individual, constructivists' accounts of learning necessarily rely on the autonomous learner, understood as the stable, core, knowing agent. In opposition to the constructivists' privileging of interior mental processes, sociocultural perspectives, mark up social contexts and experiences. They give priority to shared consciousness, or intersubjectivity, arguing that conceptual ideas proceed from the intersubjective to the intrasubjective. Semiotic mediation theory is proposed to account for intersubjective arrangements and the part those arrangements play in the development of internal controls in the learning process. Emotive and unconscious aspects are ignored by that learning mechanism.

In claiming that learning comes about from ongoing participation within a community, situated theorists offer ideas about learning that are relational and connectivist (Greeno, 2003). From a stress on the mutually relational effects of the social and individual, the idea is developed that learning is constituted socially. Lave's social practice theory, in particular, offers an insightful critique of the central

processor model of the mind. She foregoes description of a learning mechanism to explain learning as participation in social practices. Similarly, in embodied mathematical learning theory, learning is generated mutually and relationally from active and ongoing engagement within a community. Mathematical ideas are “not held by institutions or individuals but are embodied by human beings with normal human cognitive capacities living in a culture” (Lakoff & Núñez, 2000, p. 359).

Those evolving practices, and the adaptations people make to maintain coherence within complex, dynamic systems, are brought to the fore in enactivist theory. “Learning is understood in terms of ongoing, recursively elaborative adaptations through which systems maintain their coherences within their dynamic circumstances” (Davis & Simmt, 2003, p. 138). In these formulations of learning, it is not the autonomous individual that is the principal unit of analysis; nor is a collective understanding the focus. Rather, what are at stake are the evolving relationships between people and the settings made through the “nested learning systems” (*ibid*, p. 142) within which both the individual and collective are mutually constituted. In the next section we offer a development of a mechanism that is able to explain how learning emerges between people and settings and how it evolves within the dynamics of the spaces people share and within which they participate.

TAKING AFFECT INTO ACCOUNT

Each of the learning theories discussed above offers important insights (as well as important criticisms of others) about how it is that we come to learn. However, in valorising, in turn, the rational aspects of learning and promoting shared consciousness and the realization that experience is always conscious, all these viewpoints have a tendency to sidestep important affective aspects that we believe are integral to learning. As has been argued (e.g., Britzman, 1998; Ellsworth, 1997; Jagodzinski, 2002), when experience is synonymous with rational consciousness, the complex affective situations and conditions in which learning takes place inevitably are glossed over. A different perspective would foreground the importance of non-rational and unexplained aspects of learning and for us, Lacan provides a suitable theoretical framework and a language for doing that. In this section we elaborate some aspects of his critical work on psychoanalysis, and draw upon them to suggest theoretical and empirical directions for an analysis of how we learn.

Psychoanalytic theories presents complex and well-developed ideas about subjectivity (Grosz, 1995) and offer instructive lessons about knowledge that have the potential to inform understandings about learning (Britzman; Jagodzinski). In Lacanian thinking, unconscious levels of awareness, as well as conscious ones, are central to the human psyche. This understanding points to a different set of presuppositions from those upon which the disciplinary theories of learning discussed above are built. In those theories, cognitive know-how rests upon the modernist conception of the conscious and rational knower. Subjectivity, for Lacan, on the other hand, is not constituted by consciousness alone; unconscious processes will always

interfere with conscious intentionality and experience (Britzman). In Lacanian thinking, the subject is always ‘already rhetorically marked.’

Lacan maintains that the subject’s very existence consists of desire. However, rather than conflating desire with conquest and attainment, desire in the Lacanian formulation revolves around the quest for a secure identity. The learner in the classroom could not be that person without relationships, location, networks and history that allow her to fabricate a presence of self-coherence and effectivity. The desire for self-presence, however, will always be subject to the constant deferral of satisfaction. Marked by both conscious and unconscious intentionality that actualise the learner’s talk and actions, desire takes shape in the margins (Lacan, 1977). As the “*reality of the unconscious*” (Grosz, 1995, p. 67), language plays a key role in its dynamics.

It is in Lacan’s three psychic registers of subjectivity—the Symbolic, the Imaginary, and the Real—that we see potential for understanding what it is that prompts learning to take place. In the classroom setting the psychic registers work together to inform the learner’s experience and sense of perception. It is the responsibility of the learner to negotiate through any conflict that might arise from the forms of recognition that each offers. In particular, the symbolic for Lacan is the domain of laws, words, letters, and numbers that structure our institutions and cultures—the ‘Law of the Father’ and the ‘Big Other.’ For example, in the school, the Big Other might include the mathematics curriculum, the rules and procedures of the school community, and the norms of the classroom as well as the sociomathematical norms established by the classroom learning community. Students desire recognition from each other and from their teacher, as they work at embodying those signifiers. When they succeed, the recognition becomes a motivator and learning is made possible.

Lacan’s Imaginary register is the realm of visual-spatial images and illusions of self and world. Lying at the limits of perception, the Imaginary register works to undermine the individual learner’s sense of self. In the pedagogical relation the teacher and the students look for an image with which they choose to identify themselves—an image with which they feel comfortable and hope to be liked by others. For example, many students work hard to construct a sense of self and bodily appearance. That sense of self may or may not be in opposition to the contents of the Symbolic register and it is the successful learner who is able to resolve any conflict between the ‘data’ from the Imaginary and the Symbolic registers.

Lacan’s Real Register is an indicator of our socio-psychical growth; in our understanding, it can also be a measure of a productive pedagogical encounter. Desire for recognition in the Real register is concerned with the mirroring of affect and emotion. A learner may want to mirror the teacher’s desire on the basis of a range of impressions and feelings that pass through memories and unconscious desires. Those memories can be triggered by, among other things, a gesture, or the tone, pitch, or resonance of the teacher’s voice (Britzman). Lacan (1973) claims that *language*

constitutes the subject of desire, and in this he is saying that when the subject—either teacher or student—speaks he or she is trying to be recognised and liked.

In the classroom student's desire for recognition from the teacher plays a crucial part in the learning process. It is our contention that desire for the teacher's desire is what attaches the psychical to classroom practice, and classroom practice to the psychical. Role modelling is not at stake in the teacher/learner relation, precisely because the learner's talk and actions go beyond the proposals of role model pedagogies. What we want to stress is that when the learner secures the emotional resonance she desires it is precisely that time when a mathematical idea is able to attach itself and enable the student to learn productively in the mathematics classroom. It is through investigating repeated performances of the learner's strategies of self construction, in connection with others (Britzman), and explaining where the learner locates spaces of personal advantage, that the process of learning can be laid bare.

The Lacanian idea, then, that the subject's very existence consists of desire for a secure identity might be observed as those strategic projects by which, through resolving conflict between psychical registers, the learner personalises rules of conduct in order to optimize existence in the classroom. When there is no struggle over meanings between the learner and the teacher about what it means to be a learner in this classroom, the classroom becomes a safe place in which to speak and act. Inevitably that secure identification will produce new knowledge for the learner. Self-construction is, of necessity, part of a dynamic and complex interchange with knowledge. It is fundamental to learning.

CONCLUSION

This paper has explored ideas about learning. It first mapped out conventional and current ideas about learning as proffered within the discipline. It traced an engagement with questions of how learning takes place in constructivist, sociocultural, situated, embodied, and enactivist formulations of learning and proceeded to assess those viewpoints in relation to work being undertaken within social science. Noting how all these theories offer important insights (as well as important criticisms of other ideas) about how it is that we come to learn, the assumptions propping up the respective theories were unpacked. A reliance on, in turn, the rational autonomous learner, a conflation of experience with consciousness, a unequivocal acceptance of shared consciousness, and a lack of a learning mechanism were all noted as critical shortcomings to a productive understanding of the affect/cognition relation.

We have outlined some fundamental concepts from Lacanian theory and have drawn on these concepts to consider the affect/cognition relation. Although these concepts challenge central assumptions within mathematics education, the choice of psychoanalytic concepts has been deliberate to fill in the gaps and the inconsistencies in current formulations and to account for previously unexplained aspects of learning. In offering sights about how the unconscious is structured, we suggest that Lacan

offers a useful way of considering how knowledge is constituted. Drawing on his ideas about unconscious desire we suggest theoretical directions for thinking about learning as a psychic event and hint at the implications of those ideas for classroom research.

Learning in this perspective becomes a question, not about conscious experience with self and others, but rather to do with the way in which unconscious processes, working at different levels and with different kinds of information, undermine experiential knowing. The place of the unconscious, and hence the non-rational learner, then become crucial to the learning process. Arguably the approach presents a challenge to classic ideas about learning, yet the potential of such work to move forward current understandings of learning is not to be underestimated. It is our belief that it offers a fresh and helpful way to explain the relationship between the individual and the social.

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