

# Psychology of Learning for Teachers: Preparing for Classroom Inquiry

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## Abstract

This paper is a plea to enable prospective teachers to use the conceptual frameworks, tools and approaches that the discipline of psychology has to offer, so as to understand how children learn. In the course of reviewing Michael Howe's classic book *A Teacher's Guide to the Psychology of Learning* (1999/1984), I will make a distinction between gaining knowledge of theories of learning as mere information, and a deeper "understanding" that allows teachers to research learning in the context of their own classrooms. I will argue that initial teacher education programmes should shift focus from teaching theories of learning as a product to be assimilated, to understanding the processes used to generate these theories.

## Prelude

Educational psychology has long been recognized as an important domain of study for initial teacher preparation, and has been one of the "foundation" courses in pre-service teacher education programmes in most countries (Poulou, 2005). In his classic book *A Teacher's Guide to the Psychology of Learning* (1999/1984), Michael Howe reiterates that "all teachers should be experts in human learning". In the course of reviewing the book, I will argue that such expertise is gained not by mere knowledge "of the mechanisms and causes of learning", as Howe suggests in his preface to the book, but by providing teachers with opportunities to learn the methods and tools that the discipline of modern cognitive psychology has opened up. It becomes especially important for prospective teachers to understand how children learn in out-of-school contexts as well. I will use the current curriculum reform efforts in teacher education and a survey conducted in Karnataka as illustrative cases to frame my argument.

## The Book

In his preface to the second edition of the book, Howe (1999) provides an overview of "the contributions of modern cognitive psychology to our understanding of those kinds of learning that are needed for making progress in the school classroom". The first two chapters provide a very brief introduction to learning during infancy and preparation for learning at school. The crux of the book lies in chapters 3 to 5, where Howe describes studies that provide evidence for "three related and interdependent ways of aiding learning", namely encouraging mental activities, providing adequate practice and building on existing knowledge (p. 42). He combines a brief description of relevant

research studies and their findings with practical guidance for teachers to consciously trigger children's cognitive processes. It is the former that will be of most interest to teachers, for reasons I will elaborate in the last section.

In Chapter 3, titled "Mental Activities and Human Learning", Howe presents a series of three experiments by Brabsford, Nitsch & Franks (1977); Bower & Karlin (1974) and Craik & Tulving (1975) (as cited in Howe, 1999), to make the point that instructions which require participants to mentally process the pictures or words they are looking at, lead to significantly greater retention of these pictures and words. He goes on to elaborate that "memory for meaningfully perceived items is related to the extensiveness of mental processing," along with a description of an additional experiment with "more precise experimental control" (p. 30). To rule out the possibility that "extensiveness of mental processing" merely mean the time taken to do the processing, Howe gives the example of another study by Rogers, Kuiper & Kirker (1977). In this experiment, "carefully designed questions about aspects of the words other than their meanings" ensured that participants took just as long to answer non-meaning focussed questions as questions that focussed on meaning (p. 31). Nevertheless, recall of words whose meanings needed to be attended to was much higher than recall of words introduced by other tasks, such as the identification of a particular consonant-vowel pattern.

Thereafter, the same experiment of recalling words was conducted with an added condition of "self-reference", where participants were asked to identify if the words displayed (all adjectives) described themselves. They found that "participants' recognition of these items were twice as accurate as for words that followed a conventional question about the word's meaning" (p. 31). Meaning that is personally relevant to participants is what

accounts for better recall of words. In the next section, Howe quotes Craik & Tulving (1975, as cited in Howe, 1999) again, to indicate that a conscious intention to learn was not an important factor in determining what was in fact learnt; with the caveat, "(t)hat is not to say incentives and intentions have no effect in everyday learning. However, the present results do indicate that their effects are indirect ones" (p. 33). These sets of experiments broadly suggest that engaging in mental processing of meaning, in particular, meaning that is personally relevant to a learner, leads to better retention.

It would have helped if Howe had described the context of these experiments better. Also, knowledge of the age group of the participants would have helped analyse issues such as what it would mean for a teacher who is attempting to teach a new word to older children, or when a young child picked up new vocabulary. Nevertheless, it is interesting to see how studies build on one another in an attempt to increasing the explanatory power of these findings. They also offer teachers ideas and tools to help them observe the learning processes of their students, and avoid essentialising labels such as "slow learner" or "uneducable". Howe devotes the rest of the chapter to elaborate upon ways of supporting learning by structuring information (for example using a narrative strategy) and creating mental images.

In Chapter 4, Howe rues that the importance of repetition and practice in learning is not adequately recognized. He reports a number of studies to build his argument that "gaining of capabilities and competence is largely a result of steady progress that takes place as a consequence of frequent and regular learning activities, among which repetition, rehearsal and practice play prominent roles" (p. 53). The next chapter provides some strategies that can help

students become successful learners, by building on what they already know, and these are elaborated further in Chapters 8 and 9 on training for comprehension and extending writing skills. For example, drawing on research conducted by Ausubel (1968, as cited in Howe, 1999) and Bransford et al (1981, as cited in Howe, 1999), Howe suggests that to enhance learning, a teacher can help her students forge new knowledge to existing knowledge through advanced organizers, or by means of directing them "towards those parts of their prior knowledge that can illuminate the links that exist between new facts that are apparently unrelated to each other" (p. 72).

In Chapter 6 on "Intelligence and Human Abilities", Howe reviews a substantial amount of literature to break a myth held by many teachers and parents that intelligence is largely unchangeable, or that it is innate. He also debunks the ability of intelligence tests to predict success in later life by quoting a study on Chinese immigrants, whose average IQ was lower than that of white Americans when they first arrived in America soon after World War II. However, they were far more successful, for example in terms of professional job status, three decades later (Flynn, 1991). While acknowledging "inherited differences", Howe quotes research on infants (Shaffer & Emerson, 1964; Korner, 1971; White, 1971; Escalona, 1973) to show that "(t)he ways in which genetic influence have their effects on broad traits are rarely simple" (p. 106).

In the course of discussing the role of training in actively promoting effective learning techniques (in the last two chapters), Howe mentions that these skills are not easily transferred into new settings, but does not reflect on why this is so. The situated nature of learning is now well established (Lave & Wenger, 1991), as is the social context of learning (Vygotsky et al., 1978; Bruner, 1986).

## Current Curriculum Reforms in Initial Teacher Education

It was only a decade ago that policy makers in India recognized that it is important to introduce prospective teachers to socio-cultural aspects of learning (NCTE, 2009) along with "psychology of education" that had hitherto drawn on a behaviourist paradigm (Batra, 2005). All student teachers now study what are considered seminal theories of learners and learning (NCTE, 2014).

The current national curriculum framework for initial teacher education stipulates that "(s)tudent-teachers will understand theories of learning as conceptualized currently within psychology and cognitive science" (NCTE 2014, p.10). The document lists Mukunda (2009), Piaget (1997) and Vygotsky (1997), presumably as suggested readings to shape such an understanding. In fact, these readings provide excellent opportunities to understand theories of learning. For example, Kamala Mukunda's books *What did you ask at School today* Books 1 & 2 (2009 & 2019) give an accessible account of current discourses on learners and learning, along with illustrations. But they need to be "read" beyond an understanding of their theoretical formulations, if indeed these theories are to give teachers insights into how children learn in different contexts. As Duckworth (2006) argues, teachers need to think "like" Piaget instead of "about" him (p. 83). This is neither trivial nor self-evident, as the following survey shows.

### The Survey

In 2012, a survey was undertaken in the state of Karnataka to study the status of initial teacher education in the

elementary sector. The survey included a purposive sample of 108 teacher education institutes (representing 10.8 per cent of the total number of institutes that were functional in Karnataka at that time). As part of the study, 10,279 student teachers enrolled in these institutes and 606 faculty of education were asked to rate the courses according to their relevance to teaching practice, on a three-point scale (with 2 being highly relevant and 0, irrelevant). In the study, psychology of education was consistently rated as highly relevant, and received higher ratings than pedagogy courses, both from the student teachers and their faculty (Karnataka Knowledge Commission, 2012). In an earlier small scale study, 25 newly appointed teachers, who had completed their pre-service programme within the previous two years, were given the same task and this cohort also reported that psychology of education was most relevant to them as teachers (Ramchand, 2009). However, when they were asked to describe what aspects of the course they found most relevant, or even recall what they had learnt in the course, they were unable to remember anything significant (other than a few of them mumbling "something to do with chimpanzees and a salivating dog"). Student teachers who were undergoing the course could also do no better than recalling Piaget's name and stage theory.

Subsequently the elementary teacher education curriculum in Karnataka was revised to ensure tighter linkages between theory and practicum courses (DSERT, 2016).

## The Need for Practitioner Research on Learning

Children are learning all the time, both within the formal school setting and

outside. To engender meaningful academic learning, teachers need to understand how children learn. To formulate this understanding, teachers themselves need to be supported more robustly than what is envisaged in the current curriculum reforms. As practitioners, they need to be supported to undertake research on students' learning in the context of their classrooms. Foreman-Peck & Winch (2010) argue that practitioner research is essential for teaching effectively, and developing deep knowledge and professional values among educators. Further, there is evidence that an inquiry-driven teacher preparation programme supports robust learning among students (Darling-Hammond & Lieberman, 2012).

Student teachers and their faculty require physical and cognitive accessibility to research on learning. Books such as Howe's could be one such source. While dated, the book is useful in terms of giving practitioners accessible accounts of research. Mukunda (2009; 2019) gives a more updated account of what we understand about children's learning in simple and lucid language. Her books are

more in the nature of a summary of current knowledge on learning, which while crucial for practitioners, must also enable them to discern available evidence to make sense of what is useful for their classrooms. The Faculty of Education must help student teachers unpack the methods, and conceptual and analytical tools that researchers use to arrive at these understandings. This will enable student teachers to engage in "critical explorations" if they are to generate knowledge about how learning happens within their own contexts once they are employed as teachers (Duckworth, 2006). This assumes significance in the dynamic context of classrooms, given that teaching and learning are complex processes.

If the current curriculum reforms initiated in teacher education are to take root so that teachers are able to meet the diverse learning needs of children for a fast changing, complex future, prospective teachers need to be equipped not only with the knowledge that research on learning throws up, but also with robust inquiry skills to be able to function as autonomous agents of change.

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