The Importance of Context in Educational Research

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Research before the late 1970s amazes us by its naive neglect of the effect that prior knowledge has on new learning. This neglect occurred despite the writings of theorists within the dominant experimental paradigm of the period, such as Ausubel (1968), who described how new knowledge is assimilated by old with consequent changes in both; and Rumelhart, Lindsay, and Norman (e.g. Lindsay & Norman, 1972), who identified mechanisms such as tuning of learning; let alone the ideas of people outside that paradigm such as Piaget who wrote so much about beliefs and their development in children. Also ignored were the singular contributions of solitary scholars such as Oakes (1945), who probed individuals’ understanding of scientific concepts and phenomena at a time when virtually everybody else was conducting mass experiments. When, in the late 1970s, researchers did become alert to the impact prior beliefs have on new learning, a revolution followed in their work which can readily be traced in the successive volumes of Research in Science Education. This revolution is still in progress. There is, however, another factor with as much or even greater potential for promoting revolution which has been overlooked by theorists as well as researchers. That factor is the context in which learning occurs. My purpose here is to suggest reasons for the neglect of context, to establish its importance in research, to delineate its features, and to describe some ways in which it might be taken into account in research.

Why Context Has Been Neglected

While it is not possible to establish definitive reasons for theorists’ and researchers’ neglect of context, speculation about them is useful because it can indicate which aspects of context are important and because it may even identify other factors that presently remain hidden. I can suggest three sources that may be responsible for the neglect of context. There are the dominance of the scientific paradigm, the nature of the people who do research in education, and the stability and uniformity of schools.
The Scientific Paradigm

This has been the century of science and technology. In both peace and war science has pervaded all people's lives, its power is universally recognized, and so it is natural that its mainspring, scientific method, is valued. A feature of scientific method is the search for universals. It is assumed that phenomena will be consistent, for example that the laws of mechanics hold throughout the universe or that zinc reacts with hydrochloric acid at any time of day in any country. We recognize that there are boundary conditions for many phenomena, but often leave these unstated. We do not, for instance, say that the acid has to be above freezing point. In other words, we generally do not describe the context for which the statement holds true. Indeed, it irritates us when statements have to be qualified by setting out the conditions, and we like to generalise from limited cases to all situations. A classic instance is the application to all people of the conclusions reached by Freud from his study of turn-of-the-century upper-middle-class Austrian Jews. The history of psychology reveals many examples of the search for universals, a search which often involved simplifying and making artificial the context. Instances are memory experiments in which nonsense syllables were used in order to remove the influence of different amounts of knowledge, and breeding of animals for maze-running tasks so that genetic differences and prior experience could be controlled. Conclusions from these artificial studies are often taken to apply to all learning.

The Nature of Researchers

Educational research, through the 1950s and the 1960s at least, was dominated by psychologists who were imbued with the scientific paradigm. Another characteristic of these leaders was that few, if any, had spent any appreciable time as teachers in primary or secondary schools. Skinner, Bruner, Gagne, and Ausubel were experts looking at school from outside rather than former practitioners reflecting on their experience. Although their intellects enabled them to discover and report important things about learning, they did not have the experience which would have made them as appreciative as practising teachers are of the complexity, the incessant variability, the interactedness of the classroom. Consequently there is little in their writings that concerns the behaviour of groups. They describe learning as a process occurring in an individual, as indeed it is, but the point is that their individual is essentially isolated, not influenced by other learners. They do not write about the circumstances in which the individual is placed: what society, with what values; what physical conditions; what