



# 1970: Concepts: the whole cornerstone of teaching the subject

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*Piaget's and Bruner's theories and learning in geography* by Frances Slater

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Dr Frances Slater, then an officer in the Department of External Affairs in Wellington, New Zealand, published some of the findings from her PhD dissertation 'An inquiry into the kind of Geography being learned in Grades 3–12', written at the University of Iowa. The theoretical basis for her investigations relate Piaget's observations that as students mature they become increasingly able to consider facts and ideas abstractly, and by Bruner's hypothesis that those teachers who adopt discovery-learning techniques will enable the learner to cope with the problem of transfer much more efficiently and effectively (Slater, 1970, p. 88). This paper reflected the changes that were taking place in Australian Geography curricula, which were mindful of Bruner's emphasis on the identification of underlying principles that gave the discipline a structure. The importance of concept learning was reinforced by studies developed by other learning theorists such as Piaget, Ausubel and Gagné (Biddle, 1976, p. 403).

Lindsay Francis, then lecturer in Geography at the Adelaide College of Advanced Education, was also conscious of Bruner's hypotheses and

the importance of geographical concepts in structuring learning. Murray McCaskill, whose work on geographical concepts (1973, pp. 85–88), that became so pivotal to school geography courses in Victorian schools, was a member of the committee that drew up a new course for senior South Australian geography classes. The Year 9 geography course used the landscapes paradigm organised around four concepts: location, man-land relationships, areal change and region. The concepts became the 'whole cornerstone of teaching the subject, rather than being peripheral and incidental to the acquisition of a body of facts' (Francis, 1973, p. 92). Francis' task in his 1970 paper was to show how these concepts could be developed in teaching about the local area.

David Shortle, similarly, started his article by identifying some concepts that geography uses. These concepts include location, distribution, interaction, association, scale, diffusion, change through time, physical systems and human organisational systems – incorporated in a spatial context 'which confers a framework of possible relationships between the concepts' (Shortle, 1973, p. 51). He sought to examine environmental ethics within this spatial framework using distinctive geographical techniques such as those used in graphicacy or, more specifically, expressed as *mappable problems*, together with distinctive geographic modes of inquiry. Shortle saw that geographical education ought to enable students to understand ways in which people have changed their spatial environment but, perhaps more importantly, to develop their awareness of the need to maintain and improve the quality of that environment (1973, p. 52).

Davey (1995, p. 41) teased out this notion of the spatial environment to include the interactions (pathways, flows, linkages) between the natural, social and built components of the environment. Shortle recognised that an *environmental crisis* had arisen in the 1970s – a crisis that was global in scale, rapidly escalating and one that varies from place to place. He maintained that 'It is the distinctive task of the geographer to examine the spatial components, linkages and relationships of the environmental crisis' (1973, p. 63). Further, he sought a geography that was student-centred and

society-centred – a geography that must replace ‘academic’ geography in schools (p. 67).

Dr John Rutherford, then Associate Professor of Geography at the University of Sydney, examined Shortle’s reference to human organisational systems in relation to agricultural systems. The smallest unit is the farm regarded here as an open ecosystem with many components including the farm family, crops, and livestock acting as biological factories which convert inputs into economically valuable outputs (Rutherford, 1973, p. 153). The single farm is then nested into the local region, state and international centres (p. 156) to be subsumed by an international trade system (p. 158).

In the 1970s, high school geography embraced the systems model in the junior years in South Australia (Francis, 1976, p. 507) and the senior years in New South Wales (Saxby, 1976, pp. 511-521). Biddle (1976, p. 406) developed an organising framework for secondary school geography under the rubric ‘environmental systems in a spatial context’.

Tony Milne, then Lecturer in Geography at the Sydney Teachers’ College, explained that geomorphology, as a science, had to be open to change and innovation and to be able to reject, modify, and supplement earlier approaches and methods. Changes in geomorphology included meandering streams that responded to changes in channel efficiency, steeper water profiles and uniform energy loss per unit of distance (Milne, 1970, p. 139) rather than the perception of meandering being a function of old age in the downstream reaches of a river. More fundamental was the conceptual change to the framework of geomorphology: moving away from a Davisian cycle of youth, maturity and old age towards more detailed knowledge of process. Milne was alluding to the *New Geography*, which emanated from the United Kingdom (Chorley, 1965, pp 21–38, 147–163) with its emphasis on quantitative techniques, United States scholarship (Leopold & Langbein, 1966, pp. 60–70) and Australian expertise (Dury, 1968, pp. 39–52). Physical geography was then,

and is very largely now, attached to positivism where phenomena are carefully observed, accurately recorded and classified following an adherence to scientific method (Williams, 1996, pp. 6–11).

Brian Spicer, then Lecturer in Education (Geography) at Monash University, traced a decade of change in school geography in Victoria. He found that, in many schools, the objectives and basic geographical concepts had been ill-defined (Spicer, 1973, p. 392). By 1967, there had been some agreement about the main purpose of geographical education at the secondary school level: ‘to study the relationships between man’s [sic] cultural attributes, society and economy and the elements of his [sic] environment – physical and biotic’ (p. 402). In so doing, students should be able to form generalisations through the interpretation of data within the framework of the following geographical concepts: location, distance, distribution, association, interaction, movement and regionalisation (p. 402). Spicer demonstrated that Matriculation examination [Year 12] questions had become cognisant of the efforts of teachers versed in ‘modern geographical thought’ where students had successfully internalised geographic concepts.

Throughout the 1970s when Victorian schools were given complete freedom to design their own courses and assessment practices for Years 7-11. The highly acclaimed Secondary Geographical Education Project, (Geography Teachers’ Association of Victoria, 1977) provided a series of inquiry units framed by geographical questions. These key questions were closely aligned to the geographical concepts but they also were open to inquiry skills largely inspired by knowledge of the American High School Geography Project (HGSP) (Association of American Geographers, 1967, Cox, 1969, pp. 39–44, Knight, 1973, pp. 432–440). The HGSP concentrated on the structure of the discipline but it also allowed students to experience the thrill of discovering an idea by asking the right questions (Cox, 1973, p. 210).