

## CHAPTER 8

### EDUCOLOGY: THE SCIENCE OF EFFECTIVE EDUCATION

John B. Biggs

\* \* \* \* \*

*TRANSITION:* Professor Brezinka, in Chapter 1, traced the European origins of the debate over which kind of knowledge about education ought to be developed -- normative philosophical educology, scientific educology, or praxiological educology. In that chapter, 'educology' was conceived as sets of true statements about education. Professor Maccia, in Chapter 2, identified the linkages between several different conceptions of the term 'education' and the kinds of inquiry that resulted from those different conceptions. Professor Steiner, in Chapters 4 and 5, conceived of 'education' as the teaching-studenting process in any setting (e.g., within and outside of institutions). In terms of Professor Maccia's analysis, then, Steiner's conception of 'education' makes possible the distinction between inquiry about education and inquiry about other human phenomena, e.g., inquiry about socialization, enculturation, or psychical development. In terms of Professor Brezinka's analysis, Professor Steiner extends the conception of 'knowledge about education' from 'true statements about education' to 'adequate representations of educational states of affairs'. This conception makes possible the distinctions of quantitative, qualitative, and performative educology. Quantitative educology, in Steiner's analysis, includes the categories which Brezinka distinguished viz. normative philosophical, scientific, and praxiological educology. The categories of qualitative and performative knowledge about education extend beyond Brezinka's analysis. In Chapter 6, the narrower conception of 'knowledge about education' as true statements about education (vs. knowledge as representations) was used to relate educology to several concepts, including those of funds of knowledge, objects of knowledge, disciplines of knowledge, psychology of education, sociology of education, and anthropology of education. Also, three kinds of educology (analytic, normative, empirical) were related to the categories of analytic philosophical educology, historical educology, jurisprudential educology, normative philosophical educology, scientific educology, and praxiological educology. Thus, the analysis in Chapter 6 extended Steiner's distinction of quantitative educology to include historical, analytic philosophical, and jurisprudential educology. But the analysis did not allow the distinctions of qualitative and performative educology.

In the context of Professor Brezinka's historical analysis, Chapter 6 relates most closely to the position argued initially by Otto Willmann, Emile Durkheim, and Rudolf Lochner: A distinction between knowledge about existing states of affairs in education and knowledge about effective performances in education is possible and desirable.

Professor Monshower, in Chapters 3 and 7, examines the basis for a

## EDUCOLOGY: THE SCIENCE OF EFFECTIVE EDUCATION

science of education. He lays out five criteria necessary for an adequate conception of science and derives from them a strict definition of 'science', designated as  $S_1$ . He relates  $S_1$  to the science of education by defining education as a process of intentional intervention to change social and psychical dispositions. The science of education ( $S_1$  of education) is the form of knowledge about that process that meets the five criteria of strict scientific knowledge (i.e., logical consistency, empirical reference, explanation, exactitude or measurability, absence of value judgements). Monshower finds that structurally and pragmatically the science of education is not distinct from the psychology and sociology of education. (And he does not distinguish two senses of 'sociology of education', in contrast to the analysis done in Chapter 6.) There is the possibility, he argues, however, of developing a relatively distinct science of education by conceiving of it as a social technology -- a science of applying, in contrast to an applied science. This technology of education, in Monshower's analysis, has a scientific structure. It consists of problematically true generalizations about educational means (techniques) which are effective for any selected educational end, or goal. Technology, he maintains, is distinct from technics, which is the process of (1) selecting worthwhile goals and (2) choosing and using techniques that (a) have the highest probability of achieving the goals and (b) are consistent with ethical conduct. As for the concept of 'praxiology of education', Monshower equates it with a kind of bridging language which could make operationally comprehensible for practitioners (e.g., teachers, counselors, school administrators, social workers) the specialized, technical language of educational philosophy and science. He maintains that it should function reciprocally, i.e., that praxiology of education, as a bridging language, should translate the needs and concerns of educational practitioners into the more precise language forms that are required by educational scientists and philosophers for the conduct of their research and inquiry. Thus, Monshower's conception of 'praxiology of education' contrasts markedly with that of Steiner's. What he maintains could be a distinct science of education (i.e., a social technology of education) relates most strongly to Steiner's conception of praxiology of education. Her distinction between science of education and praxiology of education is made with respect to the object of knowledge -- that which is described and characterized by the knowledge. In her conception, science of education characterizes existing educational relations, and praxiology of education characterizes effective educational praxis.

Professor Biggs, in Chapter 8, maintains that a need exists for the development of concepts and inquiry that can be used to establish systems of true statements about effective educational practices. Thus, in the context of Steiner's analysis, the use of 'educology' in Chapter 8 is in the sense of 'praxiology of education' or 'praxiological educology'. In the context of Monshower's analysis, Biggs' use of 'educology' relates most closely in meaning to Monshower's use of 'science of education' and 'social technology of education'.

\* \* \* \* \*

## EDUCOLOGY: THE SCIENCE OF EFFECTIVE EDUCATION

### INTRODUCTION

While most contributors to this volume are concerned with the meta-question of the structure of educational studies, I am concerned with a lower-order issue: conceptualizing effective teaching and learning in the context of school. What sort of things about the educational process does the teacher need to know in order to be a better, or more self-aware, teacher? What does he need to know in order to generate more effective ways of presenting scientific concepts to junior high school students; social science concepts to disadvantaged tenth graders? Such questions are not philosophical ones: I would call them educological.

In an earlier paper,<sup>1</sup> I argued that, questions of content or subject matter apart, the conceptual structure within which such questions should be construed was related to but not identical with psychology. It is both more and less than what has become known as educational psychology, and so I suggested what I then thought was a neologism to describe this structure: educology, a contraction of 'educational psychology', meaning the *logos*, or set of principles, that gives educational practices their validity.<sup>2</sup>

An important distinction needs to be made between an explicit theory underlying educational practice, and the effective practice that takes place anyway, on the basis of tradition, wisdom and individual intuition. Argyris makes a somewhat similar distinction between espoused theories and in-use.<sup>3</sup> The former is crucial to the *profession* of education; the latter to the *craft* of education. As Hunt says:

Practitioners carry out their work whether informed by psychological theory or not, and psychologists should attempt to understand this activity as well as how practitioners conceptualise it.<sup>4</sup>

As far as possible, the espoused theory of the practitioner should coincide with his theory-in-use, so that what he actually does is theoretically explicit and coherent. Suppes, in discussing the place of theory in education,<sup>5</sup> remarks that while psychology, economics, anthropology and so on, may have their effects on education, education needs to develop its own "deeply structured theories . . . that drastically reduce, if not eliminate, the need for wisdom."

In this chapter, I wish to discuss some aspects of such a theoretical venture; to look at its relationship to source disciplines, and to psychology in particular; and to illustrate with some recent examples of what I would call educological theory.

### FROM THEORY TO PRACTICE

How does theory effect practice? Most academic psychologists would argue that the link is hierarchical: the practitioner deduces (or has

## EDUCOLOGY: THE SCIENCE OF EFFECTIVE EDUCATION

someone, probably an academic psychologist, do the deducing for him) from first principles what needs doing in the particular case. In other words, effective practice requires that one needs to be a psychologist first and a practitioner second.

Apart from the breathtaking arrogance of such assumptions, they are assuredly wrong. First, there is the assumption that thought leads directly to action. Unfortunately, psychologists and academics generally assume, with Plato, that their words will change the practitioner's actions; "If right words are used, the desired action will follow."<sup>6</sup>

Even within the domain of psychology itself, this does not follow. As Bannister wittily puts it, if Christopher Columbus had possessed the mind of a modern psychologist, he would not have discovered America. It is even doubtful that he would have sailed, there being nothing in the literature to suggest anything else other than the edge of the world would have awaited him. But even if he had sailed, he would have done so on the hypothesis that he was travelling to India. When this hypothesis would have been irrefutably disconfirmed, he would have sailed back declaring the experiment a failure. Bannister concludes that the hierarchical model is simply inappropriate: fruitful first order statements are not impeccably deduced from theoretical principles, and indeed, in arriving at experimental ideas one needs to think "as loosely as a drunken Welsh poet."<sup>7</sup>

Apart, then, from *hawl* and alcohol, where do practitioners get their ideas? I would suggest four sources:

1. *LIFE EXPERIENCE*. These constitute a complex of things including personal upbringing and values, personal and collective wisdom, tradition, group mores, etc. These experiences and resulting values are learned informally; they occur before and on the job independently of formal professional training.

2. *LIBERAL ARTS*. The target here is the value system of the professional person. Specifically, liberal arts studies are undertaken with a view to creating values that tend to make the individual operate ethically, compassionately, and with lack of prejudice; to make him concerned to act professionally rather than industrially; to help him recognize the contribution that can come about (see below) from other subjects and disciplines; to predispose him to be open to, and cautiously critical of, innovation; and so on. Perhaps in particular he is to develop a "Model of Man;" i.e., basic, deeply felt and frequently unspoken assumptions about what Man might be. Such a model might be global and unsophisticated, such as McGregor's dichotomy between Type X and Type Y,<sup>8</sup> to rather more articulated, multi-dimensional models. Most professionals, and particularly educators given that the fundamental medium of their profession is human interaction, have some sort of Model of Man. It is this that is the target of the "liberal arts" component of teacher education.