DESMOND RUTHERFORD
Advisory Service on Teaching Methods, University of Birmingham, Birmingham, United Kingdom


This is an exciting and important book with far-reaching implications for the future of professional education. In this review I will explore Schon's main proposals and his supporting arguments, and then illustrate their relevance to academic staff training and development in the United Kingdom. My main aim is to make the essentials of Schon's approach to educating professionals readily accessible to a wide readership in order to encourage further experiment and development.

Schon argues that professional education focuses on the application of theory — continuously updated and refined through research and scholarship — to the problems of everyday practice. Moreover, academics tend to separate theory from practice: the former is associated with rigour and is accorded high status; the latter is associated with the problems of everyday practice and attracts much less status. "Technical rationality", Schon argues, is the norm of professional schools.

In this view, professional competence consists in the application of theories and techniques derived from systematic, preferably scientific research to the solution of the instrumental problems of practice (p. 33).

Incompetence can be readily ascribed either to a lack of skill in applying the theories and techniques or to the need for their further development. The current interest in computer-based "expert systems" reflects this approach.

Much professional education can therefore more accurately be described as technical training. Yet it would seem, Schon argues, that research-based knowledge and techniques do not actually help to improve practice. There seems to be an alarming gap between what is taught in professional schools and the actual competencies needed in the field. Professional practice is not as clear cut as it is depicted in the academic world. There is uncertainty, ambiguity, value conflicts, and differences in the ways that professionals perceive particular prob-
lems. A radical new approach that would complement traditional courses is obviously needed if practice in professional education is to be improved.

Schon argues that an alternative starting point is "skillful professional practice" and that education should concentrate on identifying and developing these skills in students. At the very heart of this process the emphasis must be on learning by doing.

The paradox of learning a really new competence is this: that a student cannot at first understand what he needs to learn, can learn it only by educating himself, and can educate himself only by beginning to do what he does not yet understand (p. 93).

The setting for this new form of education is the "reflective practicum". This is a "virtual world" — a constructed representation which is neither the traditional academic world of research and teaching nor the world of practice where there are many constraints that inhibit learning (e.g., an atmosphere of high risk, pressure of time). In the practicum students must be actively engaged in the practice they wish to learn; in this process the contribution of a coach (rather than a teacher) is crucial. He must be a skillful practitioner: able to demonstrate and explain skillful practice. Schon describes the coaching task in three parts:

... setting and solving the substantial problems of performance; tailoring demonstration or description to a student's particular needs; and creating a relationship conducive to learning (p. 182).

However, "professional artistry" or skillful practice is, according to Schon's argument, not susceptible to detailed description by the practitioner: it is tacit knowledge in that he knows more than he can describe or analyse. Schon uses the term "knowing-in-action" to refer to the sorts of knowledge that are revealed in intelligent action but which can not be made verbally explicit. Such actions are spontaneous and owe little to conscious deliberation. When actions fail to achieve the desired result the hallmark of professional artistry is on-the-spot experimentation, or in Schon's term "reflection-in-action", to correct the error.

Thus the skill of the coach lies not only in his ability to demonstrate his skillful practice to the student and to explain his thinking while he is actually working but also, as far as possible, to engage the student in a dialogue of "reciprocal reflection-in-action". In this way he focuses on a particular situation and on the needs and aspirations of a particular student. Schon identifies three coaching models: Follow Me; Joint Experimentation; and Hall of Mirrors. Each of these models makes different demands on the coach and the student, and each is more appropriate to different disciplines.

In the first model — Follow Me — the coach demonstrates the skill that the