

QUESTIONS OF PROFESSIONAL PRACTICE:
INNOVATION IN THE EDUCATION OF INFORMATION PROFESSIONALS

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The main purpose of critical enquiry in the professions is the improvement of practice or the quality of services provided by professionals. Fundamental to the improvement of practice and to critical enquiry is the assessment and evaluation of merit or "best performance". Evaluation is usually based on criteria and measures derived from various aspects of practice, including mastery of the knowledge base which informs practice, the needs of the users of the services provided by professionals, and standards for service delivery based on accepted norms, some of which may have the force of law.

Critical enquiry may be carried out by individuals or groups external to the professions. It may be carried out by individual members or groups within the professions. This paper emphasises the process of critical enquiry used by individuals as they practice, and it argues that the skills of critical enquiry are essential to effective practice. In reviewing the nature of the knowledge base on which professionals make decisions and select courses of action, the paper addresses the relationship between theory and practice and the roles of academics and practitioners in education for the professions. The structure of the Bachelor of Applied Science (Information) program offered by the University of Technology, Sydney is used as a case study to explore the interplay between a formal body of knowledge required for information practice and reflection-in-action, a process which reinforces the need for professionals to develop skills of critical enquiry. The paper concludes with a discussion of the results of a study which investigated students' experiences of information practice and the extent to which those experiences contributed to the development of their senses of being professionals.

There are two significant writers on the professions whose ideas provide a framework for considering questions of professional practice. Schin (1983) and Freidson (1986) are both concerned with the credibility of professionals and the economic, social, political and technological influences on community acceptance of, and regard for, the professions.

Schin (1983) in fact identifies some reasons for the crisis of confidence which face the professions and their clients. He argues that professional knowledge is no longer adequate to the needs and problems of society. Brooks (cited by Schin, 1983:15) expresses the dilemma faced by the professions as a "requirement for adaptability that is unprecedented". The body of knowledge used by professionals and the needs and expectations

of society for professional practice are mismatched. The nature of the problems which professionals solve on behalf of their clients is becoming characterised increasingly by disorder and uncertainty.

According to Schön (1983), the dominant epistemology of practice is represented in the technical-rationality model of the professions. Practice involves problem solving through the application of general principles derived from formal knowledge to concrete problems. There are three components of professional knowledge (Schein, cited by Schön, 1983:24). They are:

1. An underlying discipline or basic science component upon which the practice rests or from which it is developed.
2. An applied science or "engineering" component from which many of the day-to-day diagnostic and problem-solutions are derived.
3. A skills and attitudinal component that concerns the actual performance of service to the client, using the underlying basic and applied knowledge.

The relationships among these three components in the technical-rationality model are institutionalised in the clearly defined boundaries of each. For example, research institutes are separated from areas of practice, basic and applied research are valued differently by academics and practitioners, and for students of the professions, mastery of knowledge precedes the mastery of skills and an understanding of professional values.

The technical-rationality model is limited in its usefulness in situations of rapid change. The problems presented to professionals are becoming more specific and more like individual events. The solutions based on general principles are no longer adequate to professionals facing the situations of their clients as new contexts in which those problems occur.

The origins of the reflection-in-action model lie in the divergence of practice rather than in the convergent knowledge base of basic and applied science. The principles which guide decision-making by professionals are derived from settings and situations found in practice rather than from the knowledge base itself. The emphasis is not so much on the problems to be solved, but on the environments in which they arise.

Reflection-in-action is a process which recognises that there is a valid kind of knowing in intelligent action or decision. Reflection allows professionals to accumulate their own knowledge bases by assimilating new knowledge into old. As a consequence, professionals recognise the patterns inherent in unique events. They make new sense of the unique situations in which they participate with their clients. Their new sense in turn reduces the risks they take when confronting further unique events.

Freidson (1986) extends the work of Schön by analysing the power bases of those who create, transmit, and use formal or codified knowledge, or the

basic and applied knowledge of Schein's hierarchy. Formal knowledge is defined by Freidson (1986:225) as

the specialized knowledge that is developed and sustained in institutions of higher education, organized into disciplines and subject to a process of rationalization. It is composed of organizing ideas and theories and of systematic substantive statements about both the nature of that portion of experience it addresses and the human activities that are appropriate to undertake in dealing with that experience. So delineated, formal knowledge may be found empirically by examining the literature produced by its creators and custodians - the professions' teachers and researchers, who are usually located in universities.

Freidson's analysis shows that different degrees of power reside in different groups of members of professions; practitioners, administrators and academics. Because each of these groups has varying access to the exercise of power in policy-making and administration, defining needs and problems, controlling work, resource allocation and dealing with clients, each group transforms formal knowledge in its own way.

In formulating rules and procedures, administrators impose on formal knowledge a consistency and formality that it may not have. Practitioners transform formal knowledge in the context of their practice situations. In following their own individual, situational judgement in unique events, practitioners transform formal knowledge in such a way that it is less consistent than the body of knowledge which is formalised by academics through the research process. Administrators seek the one best way, assuming a single world view in which rationalisation and simplification are appropriate. Practitioners in dealing with clients seek not the one best way, but the different ways which are best suited to their clients. Practitioners exercise autonomy and independence of action more than do administrators.

For students of the professions, it is important that academics and practitioners work closely. The transformation process carried out by practitioners is a legitimate one and students therefore need to be aware of the limitations of formal knowledge. Its generalisability, valued highly by academics, presents a challenge to practitioners who deal with unique events in diverse settings. Students also need to develop skills which will allow them to transform formal knowledge in the context of their experience in practice. Ideally the transformation process should begin during the formal education programs which are designed to prepare students for the professions.

Common to the thinking of Schin and Freidson is the notion of the transformation of professional knowledge by those who use it and by the situations in which it is used. The formal knowledge transmitted through professional education programs is tested and trues in practice and adapted

by professionals using it. Not only is knowledge transformed, but so too are the skills required by those using that knowledge. The range of skills varies from technical to intellectual. Given the interplay between the body of knowledge and the practice of a profession, there are implications for the roles of creators of bodies of knowledge, or academics, and the transformers of it, or practitioners, in education programs for the professions.

The Bachelor of Applied Science (Information) program designed and offered by the School of Library and Information Studies in the University of Technology, Sydney is an example of a program which integrates both the technical-rationality and reflection-in-action models of education for the professions. Its structure (see Appendix) allows for the transmission of formal knowledge as found in the empirical literature of information science and related disciplines and fields, while at the same time providing students with opportunities to transform that knowledge through practice. The structure is based on the functions performed by information professionals. These are taken as being

- . identification of information need
- . information search design
- . retrieval of information
- . evaluation of information
- . analysis of information
- . synthesis of information
- . packaging of information
- . repackaging of information
- . dissemination of information
- . design and provision of information services.

The aim of the course is to educate information professionals who will be engaged in the provision of information for use by others. The unifying conceptual framework is based on a broad marketing model. Graduates are competent to answer the following key questions relating to the provision of information.

1. What gaps and opportunities are there for providing information?
2. What financial and other resources are available?
3. What are the potential costs of providing particular products

and

services?

4. What aims and objectives are achievable in relation to the provision of products and services?
5. What strategies can be used to reach the desired objectives?
6. How good are the products and services?
7. What are the most effective methods of developing awareness of products and services among potential users?
8. What methods of delivery of products and services are

appropriate?

9. What impact does the product or service have?

Underlying the answers to these questions is a tension between general principles, developed from the body of empirical knowledge of information science and applied to the solutions of general problems, and practice principles, developed in the process of designing information products and services tailored to meet the needs of information users in the situations in which they see themselves. This tension is reflected in a paradigm shift occurring in the discipline of information science itself. The traditional paradigm has a focus on information products and services as ends in themselves. They are seen as stable solutions to problems presented by clients. The focus in the alternative paradigm is information users. Information products and services are seen as means to ends. They are not stable solutions to problems but are unique and have variable impacts on those who use them.

Freidson's formal knowledge, which is very similar to Schein's basic and applied science components of professional knowledge, is developed in the following elements of the program's structure:

- . contextual study of the information environment
- . major disciplinary study in information science
- . minor disciplinary study in computer information systems, communication or organisational behaviour
- . minor studies in communication, sociology and psychology
- . elective studies with an emphasis on the application of theoretical knowledge and skills to information provision situations and environments
- . elective studies with an emphasis on specific environments or target groups for information provision.

Some elements of the program are more concerned with concrete problem solving, the skills and attitudinal component in Schein's hierarchy. These are:

- . skills studies in administrative techniques, research and quantitative methods, computing and information production techniques
- . professional studies in which students explore professional values and professional roles, and identify their own knowledge and skills.

In Freidson's terms, it is in the professional studies element that students begin to transform the formal knowledge transmitted by academics and by practitioners. The approach to the units in this element is one of self-directed learning within a framework of career planning. Each unit is reality-centred and is designed from a learning perspective rather than from a teaching perspective. The professional experiences undertaken by students allow them to integrate their knowledge and understanding of

information science with technical, professional and intellectual skills. Throughout the program students learn the specifics of information science (terminology and facts); the ways and means of dealing with these specifics (conventions, trends, classifications, criteria and methodology); and the universals and abstractions (principles, generalisations, theories and structures).

As students develop career plans and put them into action, they use the specialist language of the area of information practice which interests them, and the conventions and approaches of relevant sectors of the information industry. In some instances they test principles in new areas of practice. In their practice, they transform the formal knowledge found in the literature of information science and related fields. They also derive principles from formal knowledge, and by applying those principles to the patterns of events they encounter in practice, they derive principles from practice. The interplay of theory and practice requires students to draw on various ways of knowing as a basis for decision-making and on the use of convergent and divergent thinking skills.

In coming to understand the knowledge base of information science and its limitations in information practice, students develop and refine the skills they need to analyse, synthesise and evaluate their current level of understanding and integrate it with newly acquired knowledge. Students are encouraged by the career planning process to reflect on what they know and what they can do and to consider the consequences of their actions. Information practice then becomes more than the routine application of specialist knowledge and skills. It is a field which is questioned and modified by those who practice in it. It is in this way that the formal knowledge of information science is transformed by students of the information profession through practice.

Based on the principles of experiential learning, the Professional Studies units are a marked contrast to the more traditional practicum mode of providing professional practice in education programs for the professions. The emphasis in Professional Studies is on the experiences which students have in different settings for information provision rather than on practice as a means of developing professional skills. Students experience information provision as does an information professional, although one with fewer resources of knowledge and skills on which to draw.

There are four Professional Studies units in the Bachelor of Applied Science (Information) program. In Professional Studies I, students examine aspects of information work which attract them, and explore personal and professional values. In Professional Studies II, they broaden and deepen their exploration of professional values and develop a career plan within bounds set by themselves. Based on the career plan, they develop a learning contract which will guide their activities in Professional Studies III. Through the learning contract, students establish objectives, identify activities suitable to meet those objectives, decide on a way to record or report the activities, establish the criteria for evaluating their

performance, and select the most appropriate people (academics and/or practitioners) to carry out the evaluation. In Professional Studies III, students implement their contracts. In Professional Studies IV, they choose another objective from their career plans, and design, implement and evaluate a contract for a task in information practice negotiated with an information professional.

As Knowles (1984:222) points out, learning contracts are an ideal way of reconciling the needs and interests of learners, in this case students, with the needs and expectations of organisations and professions. The process of reconciliation inherent in learning contracts and in career planning serves as an introduction to the transforming of formal knowledge and to reflecting on action taken and decisions made in the settings in which information professionals practice.

There has been ongoing investigation of students' learning in Professional Studies. The investigations include a survey of all students enrolled in the Bachelor of Applied Science (Information) programme (Kirk and Yerbury, 1989; Yerbury and Kirk, 1990) as well as analysis of learning contracts. (Yerbury, 1989). The results of these investigations indicate three significant benefits to students. The first is the development of a professional portfolio, the second is the adoption of an entrepreneurial approach to information practice, the third is the promotion of critical enquiry.

The outcome of the learning contracts and evidence of students' learning is a professional portfolio of knowledge and skills, experiences and examples of work, references and evaluations drawn together from the entire programme. This record of students' achievements is focussed on self-knowledge and is important in helping students determine career directions. It will help shape the way students view themselves, the information industry and the information profession.

In the professional portfolios students are encouraged to categorise their knowledge and skills using a classification suggested by Knowles (1975). Professional knowledge relates to an understanding of how a profession works, the development of a network of contacts, and recognition by members of a professional or occupational group; technical knowledge and skills are the specialist knowledge and skills of an occupational area; personal, or transferable, skills can be applied almost regardless of the specific job or occupation. Evidence of professional knowledge which students have included in their portfolios are: committee membership of the student wing of a professional association, attendance at professional meetings and volunteer work at an international conference. Evidence of technical skills have included online searching skills, compilation of bibliographies, cataloguing and screen design. Evidence of personal skills included oral and written communication, study skills, using a desk top publishing package and public speaking.

The benefits of the portfolio for students are two-fold. The self-

knowledge contained in the portfolio allows students to match their personal strengths and weaknesses against the requirements of different kinds of information work. Students can then choose to remedy any weaknesses, or modify their career choices. The portfolio also allows students to make reasoned choices among advertisements for information professionals and to respond to them with well supported applications. Some students have used their portfolios to make informed choices among competing offers of employment.

The second area of benefit for students in Professional Studies lies in the development of an entrepreneurial approach to information practice. Underlying entrepreneurship in Ross's (1988:272-3) view is strategic commitment which contains two elements - strategic thought and decision-making and commitment based on that strategy. Commitment occurs at the levels of commitment of resources, psychological commitment or commitment to action, and organisational commitment. Ross argues that successful entrepreneurs can reduce the unknown but potentially knowable through making choices which reflect the application of knowledge, skills and experience. In reducing risks by reducing what is not known, entrepreneurs boost their self-confidence and strengthen their commitment to action.

Students in the Professional Studies units have indicated fairly high levels of entrepreneurship in their survey responses. Strategy and commitment were demonstrated through the career plans and activities which students developed. The fifty six students who responded to one survey (Kirk and Yerbury, 1989,; Yerbury and Kirk, 1990) identified sixty-eight activities as being important to career goals. Comments on activities includes: "This confirmed my career choice"; "I found out I didn't want to work (there)"; "I hope (this activity) will provide references and experiences for job archives work". Students also made commitments of different kinds. For many, time was the only resource available and some spent up to tow days per week on projects. Psychological commitment is evident from the students ability to negotiate projects, the willingness to try out knowledge and skills with no assurance of success and the developing confidence in themselves. Some students plan their classes around their career goals, and many gather the support of family and friends. These activities signify organisational commitment in the context of being a student.

According to Ross (1988), one of the important ways in which entrepreneurs reduce risks is to reduce "unknowledge" through experience. The range of settings with which the students make contact is very broad (Kirk and Yerbury, 1989; Yerbury and Kirk, 1990). Among the public and private sector organisations have been community information centres, publishers, market research companies, research laboratories, public libraries, solicitors firms, radio stations, school libraries, banking and finance companies, information brokers, voluntary organisations and manufacturing companies. Students negotiated their contracts with a range of professionals including office managers, information officers, managing directors, personnel managers, librarians, systems managers, editors,

records managers and training officers.

The range of experience which students undertake in their learning contracts is very extensive and is much broader than the traditional practicum experience. Not only is the range of experience broader, but so too is the depth of the experience. Students themselves choose the levels of competence they wish to achieve within the context of the area of professional practice they wish to pursue. At a general level, students plan consciously to reduce the unknown, although there is some evidence which suggests that they had not fully assessed the risks inherent in entrepreneurial activity. (Kirk and Yerbury, 1989).

The third area of benefit to students is the promotion of the skills of critical enquiry and the development of the confidence on which critical activities rely. In drawing together the technical-rationality and reflection-in-action models of professional education, the Professional Studies units require students to question contradictions between theory and practice, and to seek to understand those contradictions (Boud, Keogh and Walker, 1985). Through reflection on their experiences in professional settings and in classrooms, students can begin to identify the reasons for those contradictions as a first step toward recognising their significance and reconciling them if necessary. They can begin to make sense of the contradictions they encounter.

Many students have commented on the opportunities they had to apply knowledge and skills. Several students (six) (Kirk and Yerbury, 1989) described the links they were able to make between the conceptual framework of their education programme and information practice. (The marketing framework has been readily accepted also by some employers who have appointed graduates in marketing positions). As part of the questioning and enquiry process, professionals need to adopt the role of learner, to remain open-minded and curious. Through Professional Studies, some of the students have developed a sense of themselves as learners. Their comments included: "I learned more than I expected"; "I have a real sense of achievement"; "I will not settle for less than I aim for"; "I like to learn something new"; "I experienced surprise at my ability to use exercise skills of which I was not confident". (Kirk and Yerbury, 1989).

In a follow up study of graduates by telephone interviews early in 1990 most described the connections between their learning contracts as students and their current work as information professionals, not in terms of technical skills, such as indexing, reportwriting or data base design, but in terms of personal and professional development. Most respondents commented on how they had gained experience "as a professional", and several remarked that they gained as awareness of their own worth, which helped them later to establish the way they wished to be treated in their new organisations. Every graduate commented on some aspect of personal development. Most described a benefit in terms of heightened self-awareness and self-esteem. These characteristics are necessary for professionals who wish to query the foundations of their practice, and to

transform the knowledge which informs that practice.

Although the investigations of Professional Studies have not yet included professionals, there is increasing anecdotal evidence that some of them too have adopted roles as learners. They rarely play the role of supervisor (Yerbury, 1988) and more usually act as a resource people, facilitators and mediators. For some, this has meant learning a new role and gaining confidence in their abilities to assess and develop professional competence and students. A few information professionals have accepted the role of mentors, a relationship with students based on mutual respect and learning. One professional described mentoring a student as "a good learning experience for me. I got some advice on how to do assessments and sort out what's important from what is not". Other professionals have commented on the development opportunities they have had as a result of their involvement with students as professionals rather than as apprentices.

Through the self-directed approach adopted in the Professional Studies component of the Bachelor of Applied Science (Information) programme students develop autonomy and independence in their learning. They have demonstrated their abilities to commit themselves to a course of intelligent action, and to reduce the unknowable by planning and thoughtful decision-making. As self-directed learners who have gained in self-esteem and self-awareness they are increasingly open to change and to seeking new challenges as they practice in the information profession. They are able to assimilate new knowledge and skills into their existing knowledge and skills bases. It is autonomy and open-mindedness which are characteristic of those professionals best able to develop practice principles by transforming formal knowledge through experience and contact with like-minded professionals practising in a range of information provision settings. Practitioners and academics together have a role in fostering and maintaining critical enquiry in the information profession. It is through the enquiry process that the profession will ensure that its future is both challenging and rewarding to those who choose to practice it.

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