Providing Reflective Online Support
for Preservice Teachers on Professional Practice in Schools

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Abstract:
The forms of support needed by preservice teachers in the practicum setting relate mainly to access to relevant information, resources, guidance and support through communication with university instructors and competent peers. Too often these kinds of support are lacking for students on teaching practice in schools. This paper describes the development of a web-site where students can access a variety of support structures which enable them to reflect on their role and performance as teachers within a resource-rich and fully supported online environment. Through the website, student teachers can access resources such as: lesson plans, samples of teaching methods and activities, links to information sources, on-line and downloadable teaching materials, and discussion facilities to enable students to post problems and queries to peers and lecturers and to receive feedback.

A Reflective Approach to Practicum Support for Preservice Teachers

I have come, over the years, in spite of all the reform agendas, to believe that the best we can do in teacher preparation programs, through a variety of courses and clinical experiences in intentionally selected schools, is to help academically able and socially committed students enter teaching with constructive dispositions and skills relating to young people, curriculum content, pedagogy, and the power of collective thought; well-developed habits of observation and reflection; reasonable confidence and an understanding that they are entering a process of learning something important every day, working toward the largest possibilities they can imagine. (Perrone, 1997, p. 649)

In today’s overstretched curriculum, and with society’s increasing demands for the teaching of a growing body of new knowledge, a competency-based approach for learning to teach is obsolete. Students cannot be competent in content and skills that are rapidly changing, or may not, as yet, even exist. As Perrone (1997) argues, it is better to provide students with generic and reflective skills that assist them in their continued learning of any new enterprise. Connecting these generic thinking skills to the context in which they occur is essential. If university programs do not do this they are likely to ‘prepare teacher technicians rather than reflective professional educators’ (Boyd, Boll, Brawner & Villaumer, 1998, p. 61).
Reflection is one aspect of a complex number of interrelated functions which contribute to task performance (Ridley, 1992), an aspect which is gaining increased attention in recent years after almost disappearing from consideration under the influence of learning models based on behaviorism (von Wright, 1992). Boud, Keogh and Walker (1985) define reflection as: ‘those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations’ (p. 19). These authors stress that such reflection must not occur solely at the unconscious level: ‘It is only when we bring our ideas to our consciousness that we can evaluate them and begin to make choices about what we will or will not do’ (p. 19). Kemmis (1985) points out that we do not reflect in a vacuum: ‘We pause to reflect ... because the situation we are in requires consideration: how we act in it is a matter of some significance’ (p. 141).

Many theorists see reflection as both a process and a product (Collen, 1996; Kemmis, 1985), and that it is action oriented (Kemmis, 1985). Knights (1985) contends that reflection is not the kind of activity which its name suggests—a solitary, internal activity—but a two-way process with the aware attention of another person: ‘Without an appropriate reflector, it cannot occur at all’ (p. 85). This view is strongly supported in the literature by others who point out that reflection is a social process (Kemmis, 1985), and that collaboration on tasks enables the reflective process to become apparent (von Wright, 1992).

Another important function of reflection is that it enables the learner to compare his or her performance or understanding to an expert in the field (Candy, Harri-Augstein, & Thomas, 1985; Collins, 1988; Collins, Brown, & Holm, 1991). Collins, Brown and Newman (1989) have also pointed out that it is important for students to be able to compare their performance with others at various levels of expertise. Access to expert performances and the modelling of processes has its origins in the apprenticeship system of learning, where students and craftspeople learned new skills under the guidance of an expert (Collins et al., 1989). Important elements of expert performances are found in modern applications of the apprenticeship model such as internship (Jonassen, Mayes, & McAleese, 1993), and case-based learning (Riesbeck, 1996). Such access enables narratives and stories to be accumulated, and invites the learner to absorb strategies which employ the social periphery (legitimate peripheral participation) (Lave & Wenger, 1991). Expert performances and the modelling of processes, allow students to observe and reflect upon a task before it is attempted. Such reflection, one might argue, is only possible in a learning environment which provides appropriate supports and communication channels to enable reflective learning to occur. And yet the typical experience of preservice teachers on professional practice is one of isolation, divorced from the support structures of their university environment, and without communication channels to their peers.

The purpose of this paper is to outline the development of a web-based resource that provides reflective support and communication to assist preservice teachers learn about teaching in the context of their school practice. Early childhood, primary and secondary education student teachers enrolled in Bachelor of Education and Graduate Diploma of Education courses at Edith Cowan University (ECU) are required to attend between 10 and 18 weeks of school practice during their training. These practices vary from continuous blocks of time in a school to distributed practice where, for example, students attend a half-day a week for one school term. In the context of reducing University and Faculty budgets, coupled with increased pressure on academic staff to increase their research output, there has been a dramatic reduction in university staff involvement in the supervision of students on school practice. This has necessitated developing alternative approaches to assisting students on school practice.

This project set about to provide an improved framework of support for student teachers during their involvement in school practice by providing them with a range of resources to increase content and skill knowledge, and to enable them to reflect on their teaching practice. Initially, the content focus centered on teaching mathematics, however, the generic nature of the skills being developed meant that these abilities could easily be transferred to other areas of the school curriculum. To support and develop generic teaching skills it was felt that students would benefit by having access to rich sources of lesson ideas, particularly those type of lessons that reflected constructivist pedagogy; and guidance and support through communication with content experts and their peers. In addition to their supervising teacher, students would be adequately supported in their practicum settings by having immediate access to:

- Quality curriculum materials to guide lesson planning;
- Examples of exemplary teaching to enable students to compare themselves to ‘experts’;
Examples of lesson activities across a range of teaching strategies and content areas;
Templates with which to build lesson plans and ideas, and teaching materials for use in lessons; and
Open communications channels to discuss problems and difficulties with their peers and lecturing staff.

Providing support along these lines could be effected through an appropriately designed Internet-based database and information delivery system. The process of using the Internet to communicate between student teachers on school practice and university supervisors has been reported (Casey 1994; Hutchinson & Gardner 1997). Recommendations from these reports include extending the process of communication to students’ peers and school supervisors. This project provides such a system with the construction of a WWW site with the following components and attributes:

- A database of prepared lesson materials accessible through a simple search engine;
- Short video clips of teaching approaches and activities to stimulate students’ ideas when creating and preparing lesson formats and plans;
- Links to the various information sources useful to students;
- Answers and suggestions regarding known problems faced by students on school practice;
- Online and downloadable teaching materials; and
- Online discussion facilities enabling students to post problems and queries to peers and to staff, and to receive feedback.

All entering students at ECU are provided with an email address and access to the Internet through the university modem pool. The vast majority of students will have access to the WWW in the schools in which they will be doing their practicums. The benefits provided by this resource include:

- Immediate access to required information;
- Ability to collaborate in a virtual community during the practicum and be relieved of the sense of isolation so often experienced;
- Ability to contribute to the database by posting successful materials of their own;
- Ability to share the information passed in the discussion sessions without having to formally participate;
- Problems and queries which surface and are resolved during each practice will be added to the database of known problems and solutions for reference by subsequent students; and
- Problems and queries will provide a significant resource for lecturers and students in their pre-planning for school experience.

Using the Resource

To ensure the successful application of the WWW resource, students are made familiar with its information and organisation before going on school practice. They gain a sense of how best the resource could be used and the real advantages that could be gained through its use. Student use of the resource on school practice can be ensured through prior activities at the University where students are required to explore the resource and all its features and capabilities and to use the resource in simulated practicum conditions by preparing sample lessons. They are encouraged to add materials of their own to relevant sections of the database and to learn appropriate procedures for online discussion and communication through computer mediation. School supervisors are also informed of the resource and encouraged to contribute and use the email facility to communicate with University supervisors. This WWW site is an extensive resource with the features and attributes described above. The site incorporates the following features:

1. **Interface Design**: The WWW site interface (see Figure 1) reflects the forms of information contained, and provides an intuitive organisational storage and retrieval structure. Several navigation and data retrieval strategies exist which include hierarchical organisation based on year groups and mathematics topics and a keyword search engine to provide access to the materials.

2. **Content Development**: The project has involved the development of lesson activities (see Figure 2 for an example) across a broad range of topics and teaching strategies. There are at least 160 such elements in the database which provides an adequate starting resource for student teachers in schools. The project has involved
lecturers in the department of mathematics education creating approximately 40 lesson activities in each of the categories: pre K-2; 3-5; 6-8; 9-12 (and these will grow as the students contribute their own lesson ideas).
The activities reflect the type of pedagogy encountered in the University methods classes and the directions advocated in such documents as the *National Statement on Mathematics for Australian Schools* (AEC, 1991) and the National Council of Teachers of Mathematics *Curriculum and Evaluation Standards* (NCTM, 1989). Many activities will have accompanying graphics and images, including images from real classrooms where the activities have been trialed.

3. **Communications Components**: development of a customised discussion program for the site supports the forms of communication and discourse described above. The communication capability of the site enables students to cross-post messages and documents providing the full capacity for information and materials exchange. This is an essential component to enable the ‘development of a rhetoric for interchanges’ (Dede, 1996, p. 168) which is so important for the effectiveness of the students’ learning support systems.

**Outcomes for Students**

Student teachers using this resource gain a diversity of expected learning outcomes developed within the context of mathematics education. These primarily relate to planning for teaching and applying appropriate teaching strategies and generic strategies developed using electronic forms of information, such as:

**Generic planning skills:**
- Plan mathematics lessons and program a series of lessons
- Select suitable learning experiences
- Select and prepare resources and contexts and plan for all pupils’ needs.

**Generic teaching strategies:**
- Become aware of and apply a range of teaching strategies
- Adapt strategies for individual pupils’ needs
- Motivate pupil interest.

**Generic information processing strategies:**
- Access, create and evaluate online information
- Communicate online.

**Evaluation**

The project is being evaluated formatively with students throughout the entire period of development in three ways: by student consultation, trial implementation and focus group discussion with student users. With a dynamic and responsive medium such as the WWW, formative evaluation is an ongoing feature, and necessary changes to meet the growing needs of the preservice teachers using the resource can be made at any stage. Summative evaluation of the resource will be conducted, in the first instance, with a qualitative study of a small group of preservice teachers. Students will be observed accessing the resource, then interviewed. The purpose of the investigation will be to assess the impact of the resource on students’ selection and preparation of lesson material, the teaching strategies employed by students in their teaching practice, and their use of electronic media to seek information and use communication technologies to establish support networks. Further analytic studies will be conducted based on the findings of the interpretive research.

**Conclusion**

This paper describes the development of an online resource to be used by preservice teachers while on professional practice in schools. The resource has been designed to support reflective practice by these students as they prepare and teach their practice lessons. The value of reflective practice and its potential to be assisted through the web site comes from several sources. Firstly, the site enables reflective practice by providing a variety of resources from which to gain alternative perspectives on any teaching task. Secondly,
communication technologies allow students to establish communication in the language of the culture, and to share stories and anecdotes of their experiences. Thirdly, the site provides exemplary performance and the modelling of processes, enabling students to reflectively compare their own performance to that of experts.

A resource such as this has the potential to transform the professional practice experience from an isolated and anxious one, where students work with minimal resources and supports, to one which is dynamic, collaborative, resource-rich, supportive and reflective.

References


