Herrington, A., Herrington, J., Kervin, L., & Ferry, B. (2006). The design of an online community of practice for beginning teachers. *Contemporary Issues in Technology and Teacher Education*, *6*(1), 120-132.

The Design of an Online Community of Practice for Beginning Teachers

Anthony Herrington, Jan Herrington, Lisa Kervin, and Brian Ferry
University of Wollongong

Abstract

Beginning teachers face enormous challenges in their first year of teaching. High attrition rates of teachers within the first five years attest to the difficulties inherent in commencing professional life as a teacher. This paper describes the design of a Web site developed to overcome many of the problems of professional isolation encountered by beginning teachers. The Web site allows new teachers to access curriculum resources that are dynamically updated through RSS feeds, to communicate with each other and expert teacher mentors through discussion boards, and to reflect on practice through weblogs. The paper describes the theoretical foundations of the approach, the features of the site in detail, and the plan for evaluation of the site.

Attracting and Retaining Teachers

The transition from *learning to teach* to *teaching to learn*, is a significant step for most novice teachers. At university and teacher training institutions, preservice teachers are surrounded by a supportive community, made up of their peers and professors. The sudden move to teaching places many in contexts that are often geographically, culturally, socially, and psychologically distant from their own school education. Within this new "reality shock" teachers often find themselves overburdened with high workloads, and teaching classes for which they are totally underprepared (Department of Education Science and Training [DEST], 2002). It is not surprising, then, that many new teachers leave the profession within their first years of teaching.

In the USA, a national study by Ingersoll (2001) indicated that 39% of beginning teachers leave the profession in their first 5 years of teaching. In Australia, it is estimated that up to 25% of beginning teachers leave in their first 5 years (DEST, 2003).

Teachers leave the profession for many reasons. Macdonald (1999) in reviewing the literature on teacher attrition identified a number of sources of dissatisfaction for beginning teachers that included "student management, lesson planning, alienation, isolation, denigration of personal interests and dependence on outside opinion and observation" (p. 841). Other factors include large classes, unmotivated students, balancing work and domestic responsibilities, and the need to compromise pedagogical beliefs and practices (McCormack & Thomas, 2003). Added to these concerns is general teacher dissatisfaction with burdensome workloads (Smithers & Robinson, 2003), relatively low salaries (Ingersoll & Smith, 2003), and the increasing employer and societal demands for accountability and change (Macdonald, 1999). The problem of attrition is further compounded in countries like Australia, where an aging workforce will result in a large number of retirements within the next decade or two (e.g., Ministerial Council on Education, Employment, Training and Youth Affairs, 2003).

Planning for the inevitable shortfall of teachers is crucial. To overcome the high attrition rate of teachers, governments have put in place strategies to attract teachers to the profession, such as more funded university places and retraining schemes. However, as Ingersoll and Smith (2003) observed, the loss of new teachers "plays a major role in the teacher shortage, but pouring more teachers into a system will not solve the retention problem" (p. 30).

A greater emphasis should be placed on finding strategies to retain teachers. The Committee for the Review of Teaching and Teacher Education (DEST, 2003) stated,

The most crucial factor in ensuring an adequate supply of teachers for the future will be to retain and support as many of those teachers currently employed as possible, particularly those in the earlier years of their careers. Induction and mentoring are an important part of the solution to retaining teachers in Australia's schools. (p. 144)

Teacher Induction

Induction is a process of professional development for beginning teachers that may include mentors assigned to provide guidance and support (Wong 2004). The central task of teacher induction as outlined by Feiman-Nemser (2001) involves gaining local knowledge of students, curriculum, and context; designing responsive curriculum and instruction; enacting a beginning repertoire in purposeful ways; creating a classroom learning community; developing a professional identity; and learning in and from practice (pp. 1028-1030). Successful induction experiences can lead to reduced teacher attrition. In the USA, Smith and Ingersoll (2004) found evidence to indicate that beginning teachers who participated in induction and mentoring activities in their first year of teaching were less likely to leave the profession. In Australia, as in the USA, the approaches to induction and mentoring are variable across the states, with some states having no systematic process in place. Even where systemic approaches are provided the results are problematic (Feiman-Nemser, 2001; McCormack & Thomas, 2003). A finding from a national report on teacher induction conducted in 2002 found, "Several states have system-level programs, but at the school level, practice is highly variable, and largely dependent on the support of principals and the goodwill of staff" (DEST, 2002, p. 21).

For many, the sense of isolation and the lack of support in schools contrasts sharply with the supportive environments most students experience in the university training. One beginning teacher summed it up this way:

I felt at uni[sic] we were really well supported with our practicums. We always had a teacher with us for the large part in our Internship who we could relate to confidently even though they were not in the classroom. Whereas now in the classroom, it is very isolated and I was not at all prepared for that isolation ... it is a lost feeling to begin with because you are totally on your own and these kids I had to handle and no one to back me up if something goes wrong. (Beginning teacher, quoted in McCormack & Thomas, 2003, p. 132)

The problematic nature of teacher induction and ongoing support needs some fresh thinking, especially in terms of involvement in the induction process and the forms in which induction is made available. Feiman-Nemser (2001) suggested that universities in partnership with school systems could become more involved in the induction process, arguing that this partnership could extend and enrich the ideas encountered in preservice education, providing a more coherent form of professional growth (p. 1038).

Although induction and mentoring generally occur within the confines of a school, there are a number of educational organizations and professional associations experimenting with online technologies as a medium for support and guidance. The use of the Internet has been recognised for its potential by a number of authors. For example, Bransford, Brown, and Cocking (2000), in their summary of research into school learning, noted,

Opportunities for continued contact and support, as teachers incorporate new ideas into their teaching are limited, yet the rapid spread of Internet access provides a ready means of maintaining such contact if appropriately designed tools and services are available. (p. 27)

Online Support for Teachers

A number of education institutions and professional associations are using information and communication technologies in an attempt to support beginning teachers. Two such examples are the Ontario Teachers' Federation's Survive and Thrive Virtual Conference for Beginning Teachers and University of Illinois at Urbana-Champaign's Novice Teacher Support Project.

Survive and Thrive Virtual Conference for Beginning Teachers is a site designed for teachers in the their first 5 years of teaching and provides online conferences given by experts around the following themes: literacy, working with parents and families, professional issues, classroom management, special education, and assessment and reporting. Resource documents, chat rooms, and links are provided. The resource does not appear to provide mentoring and peer support but facilitates communication through questions posed to webcast keynote presentations. (***Editor's Note:*** URLs for all Web sites can be found in the Resources section at the end of this paper.)

The *Novice Teacher Support Project* is a site developed to support teachers in their first 3 years of teaching and comprises face-to-face workshops, summer institutes, electronic resources, and mentoring. The project provides resource support to e-mentoring and incorporates face-to-face meetings as part of its mentoring program between novice and expert teachers. The professional development support, through discussion forums, e-mentoring, and face-to-face workshops, is linked to state-based professional teaching standards.

Projects such as these offer a number of lessons for future design. Klecka, Clift, and Thomas, (2002) highlighted potential problems with technology impacting on access and

participation; the importance of face-to-face contact; the need for responsive communication; protecting members privacy; and supporting the role of the mentors. It is apparent that online mentoring is easy to implement but difficult to sustain (Klecka et al., 2002). However, the benefits may be substantial. The results of a small scale online mentoring project conducted with 12 first-year teachers indicated evidence of "increased emotional support, decreased feelings of isolation, inc reased confidence as teachers, more enthusiasm for work, increased reflection, ability to adopt a more critical perspective, and improved problem-solving skills" (DeWert, Babinski, & Jones, 2003, p. 317).

From the lessons learned from these existing online communities, and the willingness of academics and teachers to be involved, we have developed at the University of Wollongong an online community of practice for beginning teachers.

BEST (Beginning and Establishing Successful Teachers)

In 2005, the Faculty of Education at the University of Wollongong in Australia implemented the online community of practice called the BEST site: Beginning and Establishing Successful Teachers. The site has been developed specifically for primary and early childhood teachers, although it is being further developed for other specialized cohorts, such as physical and health education teachers. The site uses the Janison Learning Management System and is organized around significant problem-based issues identified by beginning teachers, with communication tools that enable support and reflection.

Unlike many similar sites, it does not attempt to create communities from scratch, as considerable problems of identification, establishment, and maintenance of such communities have been experienced with such attempts (Schuck, 2003). Instead, it builds on existing communities—those established at university among preservice teachers.

Teacher training at the university is cohort-based, where student teachers enroll full time and progress with their peers through three structured years of training. After the third year many will get jobs as teachers or casual teachers. Others will choose to continue to a fourth year of training, which is more common throughout Australia. Generally, the fourth-year student teachers at the university study part time while working as part-time teachers. These preservice teachers were introduced to the features of the site in a short workshop session prior to the completion of their final semester. This introduction was done before they left the university to take up their positions as first-year teachers, so that the existing community could be used as the foundation for the community of practice.

Theoretical Foundations of the Approach

The design of BEST is based upon Herrington and Oliver's (2000) nine characteristics of authentic learning environments, identified from an extensive body of literature on situated learning and successfully applied to multimedia for preservice mathematics teachers (Herrington, Sparrow, Herrington, & Oliver, 1999). The nine guiding principles were used to ensure that the site provided *authentic contexts* that reflect the way the knowledge will be used in real-life (e.g., Brown, Collins, & Duguid, 1989); *authentic activities* that are ill-defined and allow sustained thinking (e.g., Brown et al., 1989); *access to expert performances* and the modelling of processes (e.g., Lave & Wenger, 1991); *multiple roles and perspectives* (e.g., Spiro, Feltovich, Jacobson, & Coulson, 1991); *collaborative construction of knowledge* (Collins, Brown, & Newman, 1989); *opportunities for reflection* (e.g., Boud, Keogh, & Walker, 1985); *opportunities for articulation* to enable tacit knowledge to be made explicit (e.g., Lave & Wenger, 1991,

Vygotsky, 1978); *coaching and scaffolding* by the teacher at critical times (e.g., Greenfield, 1984) and *authentic assessment* of learning (e.g., Reeves & Okey, 1996). Features of the site are shown and explained in the following section and justified in relation to these characteristics.

Metaphorical Interface (Authentic Context)

The site uses the metaphor of an Internet café (Figure 1), where teachers can communicate with a mentor and access issues-based resources that will assist them in solving real classroom problems. The metaphor is meant to represent the type of friendly, inviting environment, where teachers might meet with a more experienced friend or mentor to discuss the problems and issues they have in their new job. Resources are provided within the environment to give ideas and suggest appropriate approaches and to share thoughts and feelings about teaching with other new teachers and more experienced mentors. Teac hers can navigate through the site, either by clicking on the objects in the interface or by selecting the appropriate item from the menu on the left of the screen.

Figure 1. *The main interface of the beginning teacher website.*

Authentic context is instantiated in the investigation and support of real problems and issues of immediate concern to real teachers in Australian schools. These issues were identified from the literature, and from the opinions of graduating teachers who were surveyed at the completion of their final year in 2004. Major issues have been identified as classroom management, teaching and learning, professional responsibilities, special needs, assessment, and casual teaching.

Discussion Forums and FAQs (Authentic Activity)

The issues around which the communication and resources relate were identified by beginning teachers as critical for the success of beginning teaching. Identifying, discussing, and reflecting upon these issues and accessing and building resources relevant to the issues are seen as the main authentic activities within this online community. Authentic activity is manifest in the interactions, collaborations, and responses provided by the participants themselves as they use the Web site to solve problems and ameliorate concerns. At the end of each year, questions will be removed from the discussion forums and placed in a frequently asked questions (FAQs) section under each significant issue.

Mentoring by Exemplary Teachers (Coaching and Scaffolding)

A mentor has been assigned for each major issue. The mentors are exemplary teachers recognized by the Australian College of Educators. These expert teachers have volunteered their time to assist by providing advice and support on a regular basis. Figure 2 shows the discussion boards assigned to each of the identified major issues. Mentors also have their own private space on the site where they can communicate with each other and share resources.

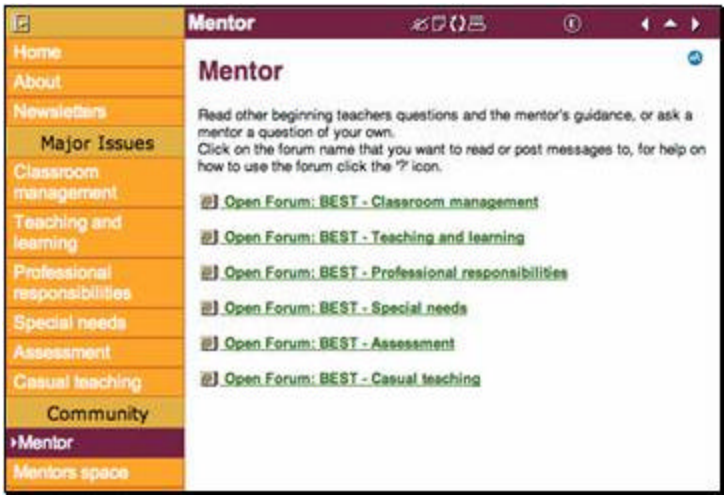

Figure 2. *The mentor-led discussion boards listed under major issues.*

Coaching and scaffolding is provided through the guidance given by the mentoring teachers and by the university lecturers monitoring the cohort groups. The support provided by other neophytes and teachers who have survived their first year is also useful in creating the sense of community that is so lacking for many beginning teachers.

Newsletters (Multiple Perspectives)

Newsletters that are continually and automatically updated (using RSS feeds) have been resourced from *EdNA Online*, an online education digital repository developed and initiated by Australian State and Federal Governments (Figure 3).

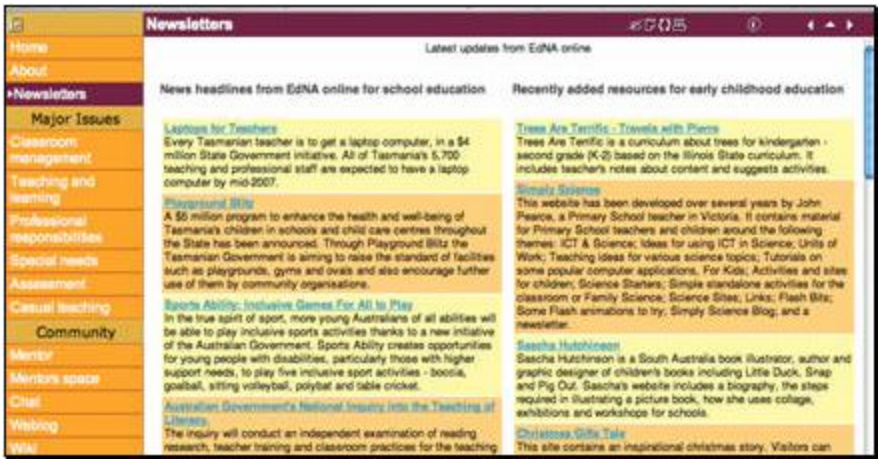

Figure 3. *The newsletter feeds from EdNA Online.*

The newsletters relate directly to issues facing primary and early childhood teachers. Multiple perspectives are provided not only through the newsletters, but through a range of human and media sources to gain different views and perspectives on the same issue, such as from beginning teachers, mentors, highly accomplished teachers, university lecturers, and preservice teachers.

Lesson Plans and Resources (Expert Performance)

In New South Wales, the K-12 curriculum is organized around Key Learning Areas (KLAs). For each KLA there is an RSS newsletter feed from *EdNA Online* that provides updated information relevant to these areas. When any link is clicked, the external Web site opens within the BEST site rather than as a separate window (Figure 4), but teachers can easily navigate back within the site using the side menu bar.

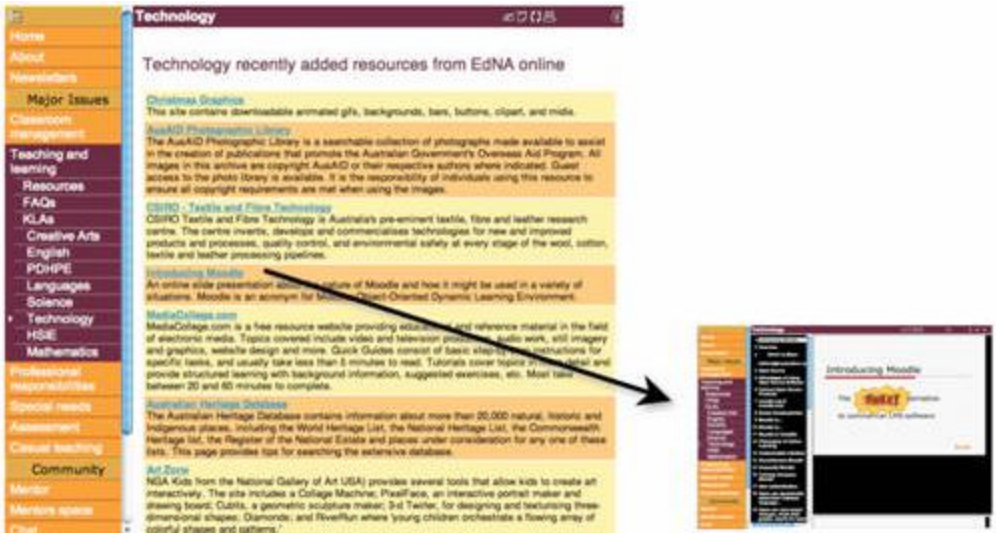

Figure 4. *The Key Learning Area newsletter feeds from EdNA Online.*

Lesson plans and other relevant links are also provided as exemplary activities for beginning teachers, under each of the identified issues. For example, clicking on the *Classroom management* link offers resources on student discipline, motivating students, and dealing with bullying (Figure 5). Expert performance can be accessed through these directed URLs and links (including education departments and professional associations), as well as the contact with teachers and professionals more experienced than the beginning teachers.

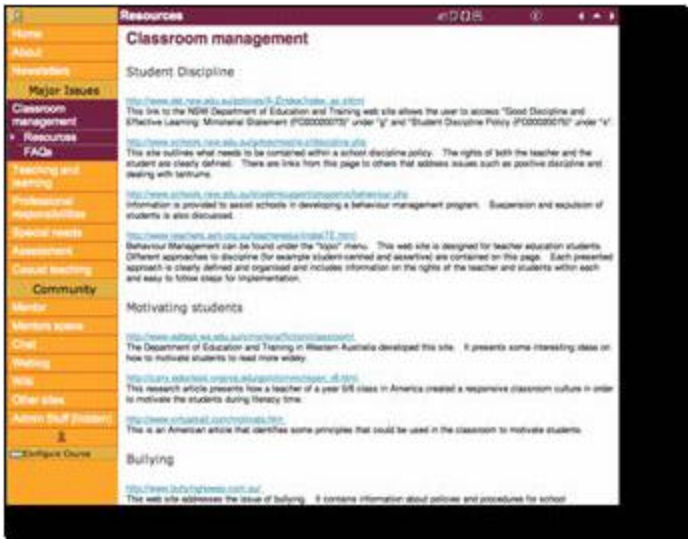

Figure 5. *Resources available for the major issues.*

Weblogs (Reflection)

The weblog feature provides a space where beginning teachers can blog their first year teaching experiences. The weblog enables users not only to reflect critically on their own experiences and developing expertise, but also to compare and comment on the experiences of others. The weblogging tool allows users to upload resources such as word processing documents, pdfs, and digital photographs. Figure 6 shows a sample weblog provided on the site.

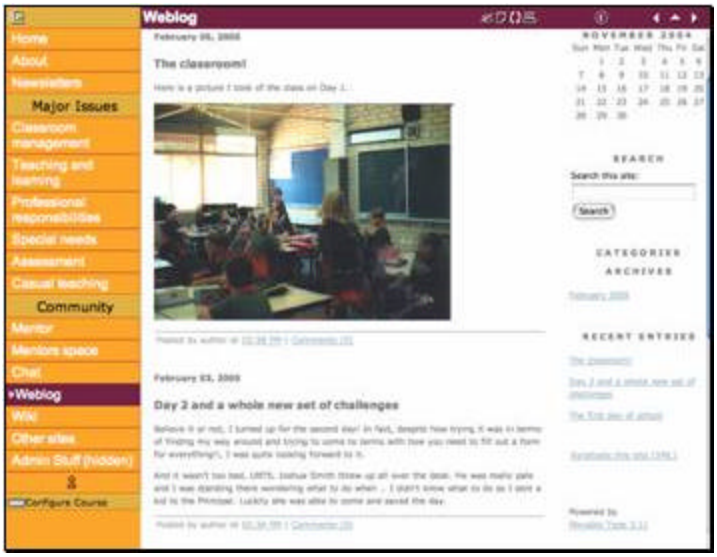

Figure 6. *The sample (fictitious) weblog provided on the site.*

Authentic Assessment

The issues and concerns faced by beginning teachers are numerous and varied. The site enables teachers to articulate these concerns and to seek coaching and guidance from their peers to experts in the field. Only the beginning teachers will know if their concerns have been resolved by the community interactions and the accessibility of relevant resources. If and how teachers use the site to solve authentic classroom-based problems will provide evidence of authentic assessment of teachers' learning in this online community of practice.

Evaluation

A research agenda has been established to evaluate aspects of the site. Evaluation has been a critical component of each stage of development, as recommended by Reeves and Hedberg (2003). A review of existing online communities of practice for beginning teachers (Herrington & Herrington, 2004), together with a literature review of situated learning, informed the project conceptualization. The use and perceptions of beginning teachers in regard to the functionality and usability of the site have been assessed. When

the project is fully implemented in 2006 (approximately 100 beginning teachers will have access to the site), an effectiveness evaluation will be conducted to determine how many of the teachers actively engage with and how they use particular features of the site. Other areas of investigation will look at determining issues that are significant for beginning teacher discussion and reflection through the forums and weblogs and identifying the approaches that mentors take in providing support and development. A longitudinal impact evaluation will also provide critical information on long-term effects of the beginning teacher Web site, particularly in relation to attrition.

Conclusion

The innovative use of online technologies to deliver collaborative support and professional development could help to remove the sense of professional isolation felt so acutely by many novice teachers. The lessons learned from similar ventures (e.g., Klecka et al., 2002) together with a strong theoretical basis in current approaches to situated learning may provide the support necessary to overcome some of the issues and concerns that cause beginning teachers to leave the profession after only a few years in the service.

Some authors have suggested that teacher attrition has its positive benefits where teachers unsuited to the profession leave, and "new blood" continually revitalizes schools (Macdonald, 1999). Although there is certainly some truth to this suggestion, attrition rates of beginning teachers in the order of 30% and above must leave governments and universities concerned that the significant expenditure on teacher training is lost on those who leave to take on other career paths. There is evidence to indicate that some curriculum areas, such as special education, mathematics and science, may be disproportionately at risk with higher levels of attrition than others (Smith & Ingersoll, 2004). Some groups in society may also be disproportionately at risk.

Teacher attrition has an important social cost that is particularly evident in regional and rural areas across the world. Rural and remote schools, with predominantly inexperienced novice teachers, have an even higher staff turnover rate than do metropolitan schools (Human Rights and Equal Opportunity Commission, 2000). Attracting and retaining professionals is seen as a significant factor affecting educational outcomes of children living in these areas.

There are many reasons why beginning teachers leave the profession, but there are many more reasons why these teachers must be retained. Providing a dynamic environment of resources and community support, enabled by information and communications technologies, may be one way to help achieve lower teacher attrition and, as a result, better student outcomes.

References

Boud, D., Keogh, R., & Walker, D. (1985). Promoting reflection in learning: A model. In D. Boud, R. Keogh, & D. Walker (Eds.), *Reflection: Turning experience into learning* (pp. 18-40). London: Kogan Page.

Bransford, J.D., Brown, A.L., & Cocking, R.R. (2000). *How people learn: Brain, mind, experience, and school.* Washington, DC: National Academy Press.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32-42.

Collins, A., Brown, J.S., & Newman, S.E. (1989). Cognitive apprenticeship: Teaching the crafts of reading, writing, and mathematics. In L.B. Resnick (Ed.), *Knowing, learning and instruction* (pp. 453-494). Hillsdale, NJ: LEA.

Department of Education Science and Training. (2003). *Australia's teachers: Australia's future: Advancing innovation, science, technology and mathematics*. Canberra: AGPS.

Department of Education Science and Training. (2002). *An ethic of care: Effective programmes for beginning teachers*. Canberra: AGPS.

DeWert, M. H., Babinski, L. M., & Jones, B. D. (2003). Safe passages: Providing online support to beginning teachers. *Journal of Teacher Education, 54*(4), 311-320.

Feiman-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain teaching. *Teachers College Record, 103*(6), 1013-1055.

Greenfield, P.M. (1984). A theory of the teacher in the learning activities of everyday life. In B. Rogoff & J. Lave (Eds.), *Everyday cognition: Its development in social context* (pp. 117-138). Cambridge, MA: Harvard University Press.

Herrington, A., & Herrington, J. (2004). University to work transition: Implications for the evaluation and design of online communities of practice. In R. Atkinson, C. McBeath, D. Jonas-Dwyer, & R. Phillips (Eds.), *Proceedings of the 21st ASCILITE Conference* (pp. 379-386). Perth, Australia.

Herrington, J., & Oliver, R. (2000). An instructional design framework for authentic learning environments. *Educational Technology Research and Development, 48*(3), 23-48.

Herrington, A., Sparrow, L., Herrington, J., & Oliver, R. (1999). Investigating mathematics education using multimedia. *Technology and Teacher Education, 7*(3), 175-186.

Human Rights and Equal Opportunity Commission. (2000). *National inquiry into rural and remote education (Australia): Emerging themes*. Sydney: Author.

Ingersoll, R.M. (2001). *Teacher turnover, teacher shortages, and the organization of schools*. Washington: CSTP

Ingersoll, R.M., & Smith, T.M. (2003). The wrong solution to the teacher shortage problem, *Educational Leadership, 60*(8), 30-33.

Klecka, C.L., Clift, R.T., & Thomas, A.T. (2002). Proceed with caution: Introducing electronic conferencing in teacher education. *Critical Issues in Teacher Education, 9*, 28-36.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: CUP.

McCormack, A., & Thomas, K. (2003). Is survival enough? Induction experiences of beginning teachers within a New South Wales context. *Asia-Pacific Journal of Teacher Education, 31*(2), 125-138.

Macdonald, D. (1999). Teacher attrition: A review of literature. *Teacher and Teacher Education, 15*, 835-848.

Ministerial Council on Education, Employment, Training and Youth Affairs. (2003). *Demand and supply of primary and secondary school teachers in Australia*. Retrieved March 14, 2006, from http://www.mceetya.edu.au/mceetya/default.asp?id=11940

Reeves, T.C., & Hedberg, J.G. (2003). *Interactive learning systems evaluation.* Englewood Cliffs, NJ: EdTech Publications.

Reeves, T.C., & Okey, J.R. (1996). Alternative assessment for constructivist learning environments. In B. G. Wilson (Ed.), *Constructivist learning environment* (pp. 191-202). Englewood Cliffs, NJ: Educational Technology Publications.

Schuck, S. (2003). Getting help from the outside: Developing a support network for beginning teachers. *Journal of Educational Enquiry, 4*(1), 49-67.

Smith, T.M., & Ingersoll, R.M. (2004). What are the effects of induction and mentoring on beginning teacher turnover? *American Educational Research Journal, 41*(3), 681-714.

Smithers, A., & Robinson, P. (2003). *Factors affecting teachers' decisions to leave the profession* (Report No. 430). Retrieved January 19, 2006, from the Lancaster University Web site: Http://careers.lancs.ac.uk/RR430report.pdf

Spiro, R.J., Feltovich, P.J., Jacobson, M.J., & Coulson, R.L. (1991). Knowledge representation, content specification, and the development of skill in situation-specific knowledge assembly. *Educational Technology, 31*(9), 22-25.

Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds., & Trans.). Cambridge, MA: Harvard University Press.

Wong, H.K. (2004). Induction programs that keep new teachers teaching and improving. *NASSP Bulletin*, 87(638), 5-27. Retrieved January3, 2006, from http://www.newteacher.com/pdf/Bulletin0304Wong.pdf

Resources

Australian College of Educators - www.austcolled.com.au

Beginning and Establishing Successful Teachers - www.uow.edu.au/educ/students/best.html

EdNA Online - www.edna.edu.au

Janison Learning Management System - www.janison.com.au

Novice Teacher Support Project - http://ntsp.ed.uiuc.edu

Survive and Thrive Virtual Conference for Beginning Teachers - www.survivethrive.on.ca

Authors Note:

Anthony Herrington
University of Wollongong
tony_herrington@uow.edu.au

Jan Herrington
University of Wollongong
janh@uow.edu.au

Lisa Kervin
University of Wollongong
lkervin@uow.edu.au

Brian Ferry
University of Wollongong
bferry@uow.edu.au