

University to work transition: Implications for the evaluation and design of online communities of practice

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Of all the professions, it could be argued that the transition from university to work is most difficult and problematic for teachers. In this paper, we argue that the separation of university training and school placement has caused many problems for the induction of beginning teachers, as attested by soaring attrition rates in the first five years of teaching, in many countries throughout the world. We describe the lessons that can be learned by examining theoretical perspectives associated with the apprenticeship system. Two theoretically derived constructs are highlighted: cognitive apprenticeships and legitimate peripheral participation. The implications these theories hold for the design of online communities of practice for beginning teachers is explored in relation to the amelioration of professional isolation. The paper describes in-progress research on the capability of the internet to provide professional support, together with examples of successful online communities of practice.

Keywords: community of practice, beginning teachers, professional development, internet

Transition to beginning teaching

The transition from university to work has, for the majority of beginning teachers, involved no transition at all. The experience for most new teachers has more closely resembled the closing of one door (university training) and the opening of another (a new position as a teacher). Typically, there is little overlap between the two. Once the students leave, there is no systematic, and little informal, follow up of their progress as teachers by the universities that trained them.

New teachers are usually inducted into teaching within the confines of their first placement school, with little support from the institutions that prepared them for their teaching careers. There is also little evidence to suggest that placement schools have the means or resources to effectively induct new teachers, as noted by Ramsey (2000). In a critical review of teaching in New South Wales, Ramsey observed that: 'In most professions, responsibility for preparation and induction of new members is viewed as a significant professional responsibility; such a view does not strongly characterise teaching' (p. 117).

In a national review of teacher induction and mentoring (DEST, 2002) it has been noted that although a number of state governments had implemented systemic programs '...at the school level, [such] practice is highly variable, and largely dependent on the support of principals and the goodwill of staff' (p. 21).

Such disinterest in whether or not these new teachers succeed is, in historical terms, a relatively new development. When apprenticeship was the principal method of learning a trade, incorporation into a community of practice was of paramount importance. Until the invention of schools, nearly all formal knowledge and skill was transferred through apprenticeships (Collins, 1988). Agricultural skills, trades, medicine, law and the arts were all taught by the 'master' who handed on the required skills to the apprentice. While it is impractical and ill-advised to suggest that teacher training and induction should be approached in an apprenticeship style, there is a great deal that can be learned from this method that is of relevance to the current problems associated with teacher transition from university to teaching.

In this paper, we propose that essential elements derived theoretically from an apprenticeship model can be employed to facilitate teacher transition and induction, specifically: *cognitive apprenticeship*, *legitimate peripheral participation* and *communities of practice*. Furthermore, we propose that the

internet can be employed to effect the instantiation of these constructs in supportive environments designed to assist the induction of new teachers.

Learning from the apprenticeship approach

Cognitive apprenticeships

Cognitive apprenticeships employ the cognitive essentials of traditional apprenticeships without the infrastructure and placement requirements. A model of *cognitive apprenticeship* was proposed by Brown, Collins and Duguid (1989), and Collins, Brown and Newman (1989). It is a method designed to 'enculturate students into authentic practices through activity and social interaction', based on the successful and traditional apprenticeship model (Brown, Collins, & Duguid, 1989, p. 37). Collins, Brown and Newman (1989) contended that traditional apprenticeships have three characteristics that are cognitively important to current learning approaches:

- Learners have continual access to models of expertise-in-use against which to refine their understanding of complex skills.
- Apprentices often have several masters and have access to a variety of models of expertise leading to an understanding that there may be different ways to carry out a task, and that no one individual embodies all knowledge and expertise.
- Learners have the opportunity to observe other learners with varying degrees of skill. (p. 456)

Over the past decade and a half since these ideas rose to prominence (and before, as many of these ideas can be traced to Dewey), many teachers and designers of technology based learning environments have sought to employ these characteristics in their teaching. They have been particularly appropriate to teacher preparation courses, as the opportunity to observe and participate in school life has been available through school placements. Multimedia and internet based programs have also been useful in providing students with models of expertise-in-use, and multiple perspectives of pedagogy (e.g., Kirk & Macdonald, 1998; Lampert & Ball, 1998; Maor & Phillips, 1996; Mousley, Sullivan, & Mousley, 1996; Pennell, Durham, Ozog, & Spark, 1997; Herrington, Sparrow, Herrington & Oliver, 1997). However, no matter how well prepared teachers are to adopt innovative and creative pedagogy, once they are employed in their full time teaching positions, they are often persuaded to adopt more conservative and traditional approaches, as they become enculturated into the practices of their new workplace (Herrington, Herrington, & Glazer, 2002).

Legitimate peripheral participation

Lave and Wenger (1991) proposed that participation in a culture of practice (such as teaching) can, in the first instance, be observation from the boundary or 'legitimate peripheral participation'. As learning and involvement in the culture increase, the participant moves from the role of observer to fully functioning agent. Legitimate peripheral participation enables the learner to progressively piece together the culture of the group and what it means to be a member: 'From a broadly peripheral perspective, apprentices gradually assemble a general idea of what constitutes the practice of the community ... who is involved; what they do; what everyday life is like' (Lave & Wenger, 1991, p. 95). Lave and Wenger propose that one of the main functions of legitimate peripheral participation is to enable the learning of the language and stories of a community of practice. In order to participate fully, it is important not only to learn from the language, but also to learn how to speak both within and about the practice of the profession. This is best achieved by immersion in the real environment, although technology can provide excellent representations of this type of experience (e.g., Fitzsimmons, 2001; Keppell et al., 2003; Koenders, 2002).

As noted by Lave and Wenger (1991): 'To be able to participate in a legitimately peripheral way entails that newcomers have broad access to arenas of mature practice' (p. 110). Whether this experience is available to the broad range of teachers both during training and in their early weeks of teaching is arguable. If preservice teachers are fortunate enough to complete courses that provide opportunities for legitimate peripheral participation, and if new teachers are given access to 'arenas of mature practice' beyond the responsibilities they have in their own classrooms, they may successfully move from observer to fully functioning agent. However, it is likely that many new teachers have never had these experiences, and continue to be deprived of them in their teaching placements.

Community of practice

The concept of community of practice involves the creation of a network of supportive and committed members of a community with similar aims and interests. In such communities, there is mutual engagement of participants in practice, the meaning of which is negotiated in the community (Wenger, 1998), and knowledge and expertise of members is deepened by interaction on an ongoing basis (Wenger, McDermott, & Snyder, 2002).

Ideally new teachers would have informal communities of practice made up of a supportive group comprising their work colleagues, mentors, and their university peers and teachers, where there is ongoing discussion, sharing, and collaboration on commonly valued issues and concerns (Stuckey, Hedberg, & Lockyer, 2001). Yet for many teachers, especially those placed in schools away from their established sources of support, the experience of their first years may be one of loneliness and professional isolation.

A possible solution to this problem is to focus on a collective of professionals where learning the practice of being a professional is distributed across the diverse membership of the profession, that is, the novice, intermediate, and expert (Buysse, Sparkman, & Wesley, 2003). The Australian *Committee for the Review of Teaching and Teacher Education* (DEST, 2003) has suggested that improved, innovative approaches to induction should involve collaboration between beginning teachers' peers, teacher training institutions, employers and professional associations. In such a community, there would be a focus on introducing members to the culture of the teaching profession, and support would be provided for the development of effective pedagogical and classroom management skills (Doerger, 2003).

Communities of practice for beginning teachers

Although there is a raft of websites and other 'survival guides' for beginning teachers, these are typically anecdotally based list of ideas and advice, or hints and tips for success rather than theoretically derived, well researched solutions. Because they emphasise authentic learning contexts, theories of cognitive apprenticeship and situated learning provide a useful framework against which to design and evaluate communities of practice. Herrington and Oliver (2000) identified nine characteristics of authentic learning environments from an in-depth literature review, specifically: *authentic contexts* that reflect the way the knowledge will be used in real life (e.g., Brown, Collins, & Duguid, 1989); *authentic activities* which 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., Vygotsky, 1978; Lave & Wenger, 1991); *coaching and scaffolding* by the teacher at critical times (e.g., Greenfield, 1984) and *authentic assessment* of learning (e.g., Reeves & Okey, 1996).

These characteristics have been used to guide the instructional design of a number of technology mediated learning environments developed to successfully support professional learning in teacher education and higher education. The characteristics can also prove useful as a framework for the evaluation of existing learning environments, such as online courses (cf. Herrington, Herrington, Oliver, Stoney, & Willis, 2001) and, as argued here, in both the evaluation and the design of online communities of practice.

Evaluation of existing communities of practice

A number of communities of practice (CoPs) have been developed for the professional development and support of beginning teachers: the Ontario Teachers' Federation's *Survive and thrive virtual conference for beginning teachers*, Indiana University's *The Novice Teacher Support Project* and North Carolina's *Learn NC* are three such examples.

Survive and thrive virtual conference for beginning teachers [<http://www.survivethrive.on.ca/>] is a site designed for teachers in their first five 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, assessment and reporting. Resource documents, chat rooms and links are provided. The resource does not appear to provide mentoring and peer support other than through discussion boards. Expert perspectives are provided by webcast keynote presentations, resource documents and web links around the eleven themes.

The Novice Teacher Support Project [<http://ntsp.ed.uiuc.edu/>] is a site developed to support teachers in their first three years of teaching and comprises face to face workshops, summer institutes, electronic resources and mentoring. The project provides resource support to e-mentoring and values 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.

Learn NC [<http://www.learnnc.org/index.nsf/doc/network?OpenDocument>] is a site designed for improving K-12 education in the state. A section of the site relates to new teachers where resources and advice are offered around four themes: isolation, curriculum, classroom management and communication.

Table 1 below shows how nine characteristics of authentic learning environments have been used to identify the features of the communities of practice described above. The table highlights the extent of elements available at each site, although it should be noted that some areas of these websites are only available to members and may contain further elaborations of the nine characteristics. Blank cells indicate little or no evidence of instantiation of the characteristic.

Table 1: Evaluation matrix of communities of practice

Element of authentic learning environment	Community of practice		
	Survive and thrive	Novice teacher support program	Learn NC
Authentic context	Authentic context implicit Photographs of teachers learning	Authentic context implicit	Authentic context implicit Photographs of children learning
Authentic activity	Thematic topics	Plan for state based certification Professional development units	Thematic topics
Expert performances	Keynote presentations Documents and weblinks	Documents and weblinks	Teacher case stories Documents and weblinks
Multiple perspectives	Discussion boards	Discussion boards	Teacher case stories
Collaboration	Discussion boards: experts, mentors and peers	Discussion boards: mentors and peers	
Reflection	Archived discussions		Reflective checklists
Articulation	Discussion boards	Discussion boards	
Coaching and scaffolding	Issue specific online mentoring	Online mentoring Face to face workshops and institutes	Links to mentoring sites
Authentic assessment	Site evaluation		

Each of the elements of an authentic learning environment is reflected differently in each of the sites, some more successfully than others. While all sites implicitly reflect an authentic context by their very *raison d'être*—they exist to provide solutions to real world problems—other elements are neglected or given little attention. For example, with the important coaching and scaffolding function, the sites vary in the extent to which mentoring is carried out. It ranges from sites where only links to other mentoring sites

are provided, to discussion boards where mentors and mentees can interact, through to organised face to face meetings with one on one mentors supported by online discussions. Similarly, when examining the authentic activities and issues that are addressed on the sites, some sites are issue and location specific, while others are open to self initiated topics arising from the concerns of members of the community. The process of assessing the extent to which each of these characteristics had been employed was capable of revealing weaknesses in the composition of the community of practice. It is argued here that attention to these elements in the design phase of a community of practice would ensure a more robust and successful environment to nurture the development of beginning teachers.

Design of a community of practice

In an effort to address many of the problems faced by beginning teachers without a supportive community, the Faculty of Education at the University of Wollongong is planning the development of a web site designed specifically for novice teachers. The current developments at the university will use the characteristics as a guide to design a community of practice. For example each characteristic will be operationalised as shown in the Table 2 below:

Table 2: Design matrix for a community of practice

Element of authentic learning environment	Design feature of CoP
Authentic context	Investigation and support of real problems and issues of immediate concern to real teachers in Australian schools, identified from the literature and the membership base
Authentic activity	Manifested in the interactions, collaborations and responses provided by the participants themselves as they use the website to solve problems and ameliorate concerns
Expert performances	Access to expert performance through directed URLs and links (including Education Departments and Professional Associations) Virtual bookshelf, listservs Exemplary teaching videos Contact with teachers who are more experienced than themselves
Multiple perspectives	A range of human and media sources to gain different views and perspectives on the same issue, such as beginning teachers, mentors, highly accomplished teachers, university lecturers, preservice teachers
Collaboration	Discussions at the local (State and National) level, and in the listservs at the international level to create solutions and guidance on significant professional issues and problems
Reflection	Resources to allow teachers to reflect, monitor and evaluate their own teaching, such as: <ul style="list-style-type: none"> • a 'frequently encountered problems' page, • discussion boards and • a personal online journal or blog
Articulation	Opportunities for expression and publication of ideas, such as: <ul style="list-style-type: none"> • online journal (where personal observations and growing understanding can be articulated), and • listservs and discussion boards
Coaching and scaffolding	Provided through the guidance provided by the mentoring teachers and university lecturers monitoring cohort groups Face to face meeting of mentors and mentees Text and video resources, and the other participant teachers on the website.
Authentic assessment	Focus groups with participants to monitor emerging issues, share achievements and evaluate progress.

It is planned that preservice teachers will be introduced to the community of practice site in their last year of training. They will be invited to participate peripherally, by observing the community and the interactions between the new teachers and mentors. In this way, they will be exposed to many of the real day to day problems encountered by beginning teachers, in a way that their teacher training cannot do. They will be able to access resources for their own professional practice and university assignments. They will also be invited to contribute to discussion boards and resource collections, and to interact with teachers and mentors as appropriate. Importantly, they will interact with each other online, within their cohort groups, in a useful communication channel that will be used when they are in their own first year of teaching. It is this 'ready made' community that distinguishes the proposed community of practice from the many that seek to set up such support cold.

As the students move from their university training to one of placement as first year teachers in a school, they will be able to continue to participate in the community of practice no matter where they are located physically. Professional isolation is less likely because they have a supportive community to which they can turn for help, ideas, and advice—support that could possibly sustain beginning teachers' commitment to their teaching careers.

Conclusion

There is an increasing and worldwide problem of beginning teacher attrition. It is estimated that in the USA, the UK and Australia up to 39%, 30% and 25 % respectively of beginning teachers leave the profession in their first five years of teaching (Ingersoll, 2001; Adams, 2003; DEST, 2003). The problem is further compounded in Australia where an ageing workforce will result in a large number of retirements within the next 8-10 years (Ministerial Council on Education, Employment, Training and Youth Affairs, 2003). The Committee for the Review of Teaching and Teacher Education (DEST, 2003) states that:

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)

The failure of the teaching profession to guide and nurture its new teachers has placed many new teachers beyond their own comfort zones in the least constructive manner. The statistics on teacher attrition confirm that a critical point has been reached. The lack of a profession-wide approach to teacher induction requires that we look for new ways to support novice teachers. A technology based community of practice is one approach. This paper has argued that such an approach might have a greater chance of success if a design framework is applied using characteristics that have arisen from researching other successful, technology mediated, authentic learning environments developed for the professional learning of teachers. In this way, the time honoured key features of the apprenticeship system can be updated and harnessed through technology for a new generation of beginning teachers.

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