

Good CoP: What makes a community of practice successful?

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Abstract

We have established a community of practice focussed on student learning in first-year science. It is recognised that transition, whether from school to university or other possible transitions, is an issue that is a concern for the entire sector, and this is acknowledged both at Faculty and University level. One of the factors to which we attribute the success of this Community of Practice (CoP) is that we are working within the context of a well-established set of transition pedagogies which have been strongly promoted and supported within the University of Technology, Sydney (UTS). There is also an internal grants scheme that provides small amounts of funding for initiatives aimed at improving transition and engagement as part of the widening participation strategy. Another factor for the success of this group is the leadership and active engagement of a senior staff member. This CoP has not evolved organically as a grass-roots group, nor has it been commissioned from “on high.” The Faculty of Science has also recently appointed an academic developer to support course renewal and the mapping of graduate attributes, and this role includes the support of initiatives such as setting up CoPs.

Keywords

Communities of practice, transition pedagogies, first-year science.

Introduction

The University of Technology, Sydney (UTS) has responded to the national agenda on widening participation in higher education by students from non-traditional groups including students from low socio-economic status (low SES) background by investing significantly, in both appointments and programs, that support transition to higher education. It has been identified that it is critical to put support in place to retain these students once they have commenced higher education studies. Even for well-prepared students there are significant difficulties associated with negotiating the transition to higher education, whether that transition is from school, from a TAFE college, from a considerable hiatus in study, or from the world of work. There has been considerable work around transition pedagogies, particularly that by Kift, Nelson and Clarke (2010), and UTS has appointed a coordinator to work with Faculties to ensure that the transition pedagogies are embedded in their first-year practices. The First-Year Experience grant scheme, though fairly small in overall scope and size of individual grants, has been an important stimulus to work on improving the first-year experience for all students and particularly those of low SES background. Some funding has also

been granted to Faculties to appoint a Faculty-based transition coordinator (fractional).

What are CoPs?

One of the most straightforward definitions of a community of practice (CoP), that is widely quoted, is:

Communities of practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis.

(Wenger, McDermott & Snyder, 2002, p. 4)

Many workplaces use teams to achieve objectives and there is a strong literature on teams and teamwork but CoPs differ from teams or work groups in the following ways: membership is voluntary; the goals of a community are less specific and more changeable; results are not easily discerned or measured; the community exists as long as its members participate (Wenger & Snyder, 2000).

As a CoP develops, it will create its own way of operating and, to some extent, develop its own culture. Some ways in which the CoP and its members will define itself are:

- Local lore, shared stories, inside jokes, and knowing laughter;
- A shared discourse reflecting a certain perspective on the world;
- Shared ways of engaging in doing things together;
- Very quick setup of a problem to be discussed;
- Jargon and shortcuts to communication as well as the ease of producing new ones;
- Certain styles recognised as displaying membership.

(Wenger, 1998, p. 125)

In terms of further defining CoPs, there are key roles that appear common to any successful CoP (Borzillo, Aznar & Schmitt, 2011). The most dedicated core members are considered *community leaders* and their skill is considered the most critical success factor in the success of the CoP. The community leader may identify key issues to pursue and takes responsibility for the vitality and effectiveness of the CoP. Leaders are accountable for the level of member participation and have a role in convening and moderating member meetings. The planning and facilitation of the CoP events are the most visible aspects of the leader's role (Wenger, 2002). The leader will also manage the boundary between the CoP and the formal organisation, including promoting the value of the CoP to the organisation, assessing the health of the CoP and evaluating the contribution of the CoP to members.

Other roles within a CoP include:

- *Facilitators* are those members who network within the community and connect members. They encourage member participation by facilitating discussion and keeping the activities of the CoP engaging and vital. Facilitators can cross boundaries between organisational units and broker knowledge assets.
- *Subject-matter experts* are the keepers of the CoP knowledge domain or practice who

assist CoP members in their knowledge quests with their specialised tacit knowledge.

- *Core members* are strong contributors who make the most of meetings which are usually informal (McDermott, 2001). They participate actively in meetings of the CoP and assist in the identification of core topics and help guide the CoP's learning agenda. Core members provide intellectual and social leadership, while their passion for the CoP energises the community (Wenger & Snyder, 2000). Core members should be considered potential successors to the coordinator. The success of a CoP often depends on the extent of commitment of the core members (Vestal, 2003).

CoP members are part of the active or peripheral zones with their degree of participation ranging between active and limited. It is their responsibility to participate by attending meetings and taking part in discussions though perhaps not as frequently as core members (Wenger et al., 2002). Some members might not contribute actively but still gain value from the CoP by finding out who is working on new ideas and learning who to contact for further information. These members are known as *lurkers* (McDermott, 2001). Many members are on the periphery of the CoP in that they observe the interactions between the core and active members, perhaps because they feel that their contribution may not be appropriate. Simply observing and listening to what happens in the CoP can provide members with valuable insights that may be useful when lurkers decide to increase their involvement.

It would appear from the literature that CoPs were originally established by management in engineering companies to bring together who may not have had common experiences but had skills / experience that could be brought to bear on complex problems (Wenger, 1998). In a paper examining attitudes to CoPs in Caterpillar Inc., Ardichvili, Page and Wentling (2003) investigated whether there were significant barriers to knowledge-sharing through CoPs. The majority of respondents to their survey felt that knowledge was a public good that should be shared though there was a minority view that some members engaged in "knowledge hoarding," that is, viewing knowledge as a private asset and a competitive advantage. Some of the CoPs so far established have enjoyed a long history and often have substantial membership, distributed across many sites and countries. In some of the more extensive CoPs, there might be several community leaders and several facilitators (Borzillo, Aznar & Schmitt, 2011). CoPs have become commonplace in educational institutions as a means of bringing staff members together to discuss matters of common interest, as well as being used in educational practice itself. Examples of this include: nursing education (Garrow & Tawse, 2009); CoPs in a design studio / architecture (Morton, 2012); CoPs in university libraries (Sánchez-Cardona, Sánchez-Lugo & Vélez-González, 2012); and supporting doctoral studies (Lahenius, 2012).

The first-year Science Community of Practice (CoP) at UTS

Initially ignorant of the background literature on communities of practice but attracted by the notion of community, particularly the resonance that community has with collegiality in an educational context, and recognising the importance of achieving improvement in the sphere of first-year experience, we decided to launch a first-year science community of practice (FY Sci CoP) at UTS. The focus on practice was also an attraction in that we felt that we would be able to convene an effective group that considered improvements to current practice.

Some of the major issues that motivated the formation of the FY Sci CoP were:

- Significant failure rates in certain first-year science subjects;
- High attrition rates in Science courses (for 2012 just under 20%) with most attrition occurring in first-year, that is, failure rates in first-year subjects and attrition were strongly linked;

- Institutional support for projects that investigated improvements in learning and teaching in first-year as part of the Widening Participation Strategy, for example First-Year Experience grants;
- Awareness of the transition pedagogies enunciated by Kift, et al. (2010) and an interest in exploring application of these principles in our subjects and courses.

We entered this enterprise with a clear view that there were significant issues to address and that it was very important that the FY Sci CoP was participant-driven not management-driven. Colleagues within the Faculty of Science had been very successful in applying for First-Year Experience grants (FYE grants) made available internally at UTS as part of the Widening Participation Strategy. The idea to establish the CoP was inspired by this clear groundswell of interest in first-year science teaching and learning in the Faculty of Science and to share experiences across Schools within the Faculty and even across subjects within Schools. Within Science, we tend to work within silos variously called Chemistry, Physics, Microbiology, and Environmental Science. There are often barriers to openly sharing our expertise particularly within local academic units where hierarchy issues might be present.

In terms of our initial ideas about the purpose of the CoP, we believed that it would provide a forum for the discussion of several current issues, including:

- Discussing transition pedagogies;
- A platform for Faculty-wide initiatives;
- Sharing good practice;
- Identifying common issues;
- Collaborating on FYE projects;
- Aligning assessment for the first-year cohort;
- Developing strategies to address weaknesses in background;
- Increasing engagement;
- Arresting attrition.

The proposal for the CoP was timely because there was some internal support offered for communities of practice that were related to the Widening Participation Strategy. The Faculty of Science has been in the vanguard with an active CoP running for some time now. We are pleased that attendance at catered meetings was always around 20 members. Colleagues from other Faculties with specific responsibility for first-year and transition have also attended our meetings to observe our CoP in action.

The meetings have been largely informal, although there is usually a pattern of three different presentations per meeting followed by discussion. One of the themes prominent in the meetings of the CoP has been a discussion of audience response systems to achieve student engagement, particularly in large lecture groups. There have been a variety of approaches to implementing this strategy and the CoP has certainly been a stimulus for science academics to adopt these methods. In terms of a success measure, trialling an audience response system in several subjects has been a direct result of the exploration of the applicability of these systems at meetings of the FY Sci CoP. As an example of engaging outside expertise which is thought to be an important way to stimulate a CoP (Probst & Borzillo, 2008), we had a presentation from the author of an audience response system and were able, from our experience, to make suggestions for improvement. At one stage, it looked like the CoP could be overwhelmed by discussion on audience response systems so we deliberately curtailed discussions on this topic.

After the first three CoP meetings, we allowed members to opt-in to a survey (that coincidentally allowed them an experience of an audience response system) to gather feedback and suggestions on the operation of the CoP. Some members expressed concern that monthly meetings were too frequent in semester time, so we changed the frequency to approximately every six weeks. There are no designated positions in the CoP, though the authors of this paper generally planned the meetings in consultation with members, organised the catering and circulated the agenda and appropriate reminders.

The initial meeting had a number of highly-structured participant activities, designed by a Faculty outsider, with set time-lines and the necessity to report back from breakout sessions. Participants found this approach too restrictive, so a much more organic approach has been developed. It might be argued that the foundation meeting with considerable input from outside the Faculty actually motivated the Science staff to take responsibility for the CoP themselves helping to establish ownership of the CoP within the Faculty.

A notable feature of the CoP has been the level of discussion and debate. We gather around a common interest in teaching first-year science students and that many members share the same cohort of students. The focus of the work of the CoP is the general issue of enhancing teaching and learning in first-year science but more immediately, there is a concern for the learning of the current cohort of first-year science students who will be studying Chemistry 1, Physical Aspects of Nature, Mathematical Modelling, Cell Biology and Genetics.

Several topics of discussion in the early part of 2013 were either reports on First-Year Experience grants that had been completed in 2012 or were commencing in 2013. Through discussing these projects, members of the CoP developed a clear idea about the particular interests of other members, and importantly, innovative practices they have introduced or are considering.

It is useful to think of participation in the CoP in terms of the relative centrality or periphery of members and the porosity of the barrier between core and peripheral membership. Initially the membership of the CoP was made up of full-time academic staff members who teach first-year subjects in Science, who naturally would identify with the core of the CoP. There has always been a conscious effort to be inclusive rather than exclusive and notices have always been circulated widely. The Faculty has been very successful in drawing casual teachers, the vast majority of whom are our own Honours and post-graduate students, into the academic community. Casual teachers have attended a few CoP meetings and contribute actively to debate and discussion. Where they might have been thought of as peripheral members, they have identified themselves with the core. In terms of the identity of the CoP and its role in establishing and changing identities of individual members (Putz & Arnold, 2001), it can be clearly seen that participation in the CoP has assisted these young teachers in establishing their identity as a higher education academic. Having a vast range of experiences at the CoP, from members in their first or second year of higher education teaching to those with over thirty years of experience, also gives an opportunity to exploit the notion of newcomers and old-timers discussed in the context of discipline-specific professional development CoPs (Blanton & Stylianou, 2009).

Why CoPs succeed or fail

Anecdotal evidence suggests that some CoPs are extremely vibrant with a great deal of debate and discussion occurring in regular meetings. Through sharing insights, practices, ideas and innovations, the members of the group become more effective practitioners and, in an educational setting, the students ultimately benefit. Other CoPs are launched but fail to achieve buy-in from participants, there is little discussion or debate at meetings, or membership dwindles to the point that meetings are no longer sustainable, leading to the CoP folding and most members considering that they have wasted their time. A study of CoPs set up within a trade union in Canada concluded that “CoPs cannot be deliberately planned and configured” (Harvey, Cohendet, Simon & Dubois, 2013). Quoting Wenger (1998), those authors point out that the optimal features, namely, mutual engagement, joint enterprise, and shared repertoire, must be in place or the CoP will fail. There is

interest in trying to identify which factors lead to a successful CoP, because when they do work in an educational context, the benefits are substantial both to the members and the students with whom they interact.

Probst and Borzillo (2008) have written about CoPs established within industrial settings and have identified factors that characterise successful and unsuccessful CoPs. Some of those factors are not relevant to a higher education context but, of those that are relevant, the following are reasons for success that we can identify as being present in the FY Sci CoP:

- Stick to strategic objectives;
- Feed the CoP with external expertise;
- Promote access to other internal and external networks;
- The CoP leader has a driver and promoter role;
- Overcome hierarchy-related pressure.

In terms of reasons for failure of CoPs, Probst and Borzillo (2008) include (a) the lack of a core group; (b) a low level of interaction between members; and (c) the lack of identification with the CoP.

Success factors

A small-scale survey was conducted with the members of the FY Sci CoP in November 2013. There were 26 responses. The results for specific questions are presented in Table 1. Participants were asked to respond to a set of statements using a 5-point Likert scale (SD = strongly disagree; D = disagree; N = neutral; A = agree; SA = strongly agree).

Table 1
Response to CoP survey

Statement	SD	D	N	A	SA	Score
I find participation in the FY Sci CoP sessions assists me in thinking about my teaching.	0	1	1	11	13	4.38
There are topics in each meeting of the FY Sci CoP that interest me.	0	0	1	16	9	4.30
The meetings of the FY Sci CoP are worthwhile and should be continued.	0	0	0	9	17	4.65

The survey provided the option for open-ended comments. From analysis of these statements, we have determined that the factors that made the FY Sci CoP a success. These could frequently be corroborated by findings in the literature. The factors include:

- First-time provision of an on-going forum to discuss learning & teaching issues in the Faculty of Science;
- Early establishment of ownership of the CoP by the members;
- Informal nature of the meetings;
- Creation of a 'safe environment' in which to share ideas: communities of practice help foster the process of storytelling among colleagues which, in turn, helps them strengthen

their skills on the job (Seeley Brown & Duguid, 1991);

- No designated leadership positions, though significant leadership;
- A core of ‘regulars’ who are active in presenting and/or leading discussions: “typically it has a core of participants whose passion for the topic energizes the community and who provide intellectual and social leadership” (Wenger & Snyder, 2000);
- Institutional support for the CoP: “although communities of practice are fundamentally informal and self-organizing they benefit from cultivation. Like gardens, they respond to attention that respects their nature” (Wenger & Snyder, 2000);
- Not management-driven: “it’s not particularly easy to build and sustain communities of practice or to integrate them with the rest of the organization. The organic, spontaneous, and informal nature of communities of practice makes them resistant to supervision and interference” (Wenger & Snyder, 2000);
- The transition pedagogies (Kift, et al., 2010) provided a good framework.

Some comments of specific interest made by members about their participation in the FY Sci CoP include:

- *The mixture of presentations and discussions - often, T&L events are heavy on the first and light on the second, which is frustrating. I like being able to see what people are doing (and why), then talking with them further about logistics, [gaining] potential help to do the same in your own subject.*
- *Presentation on the careers for scientists subject was very insightful and it is definitely something that should be continued and further implemented.*
- *Hearing the 2014 grant apps [applications] was good. It was good to hear about what others are planning and to get ideas about what could work in our school.*
- *It’s good to hear about how others are addressing teaching issues such as engagement, student feedback and assessment and then looking at how to incorporate both new approaches and new technologies.*
- *Chance to share experience in a relatively informal setting.*
- *The less formal structure is the perfect place for discussions.*
- *Networking, moral support.*
- *Sharing of knowledge about FY across the Faculty. Giving a forum to T&L issues.*
- *Sharing ideas with colleagues but also with other sectors of UTS (e.g., careers).*
- *Listen to what other staff are doing in their subject and gaining inspiration.*
- *Very interesting to find out about the work in different disciplines.*
- *Sharing successful practice that can be rolled out to other subjects or schools.*
- *Hearing about other educators’ experiences and new technologies – just great!*

In terms of measuring outcomes, the influence of the CoP is likely to be longer-term and perhaps it will prove difficult to identify specific impacts. It may be possible to identify curriculum changes or introduction of a new approach to teaching that led to an improvement in pass-rate in a subject but tying that change back to the CoP might be difficult. There may be incremental adoption of good practice and in the longer-term there may be a substantial change in culture. Overall, very positive responses were received about the FY Sci CoP and strong agreement that it should be

maintained. It will run as long as there is sustained member interest and sufficient self-generative discussion to keep its role both useful and vibrant.

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