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# Initiating Community Engagement for Enhancing Preservice Teacher Education

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## **Hudson, P. and Hudson, S. Queensland University of Technology, Australia. Initiating Community Engagement for Enhancing Preservice Teacher Education**

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### **ABSTRACT**

Facilitating community engagement in education is promoted and emphasised in university policies and strategic plans. How can a university facilitate innovations to develop collaborative partnerships with its community? This paper presents leadership processes for initiating community engagement with an Australian university and highlights examples of innovations in Science Education for Sustainable Living (SESL) with preservice teachers' reflections on their teaching practices. Data collection included observations of practice, interviews, minutes of meetings, and written correspondence with a wide range of participants (i.e., senior QUT staff, lecturers, preservice teachers, principals, school executives and teachers, and other community members). A four-step process for implementing SESL innovations provided an example of university-community engagement, and was used as a catalyst for preservice teachers (n=14) to reflect on SESL, which provided opportunities for enhancing their science teaching practices. Results indicated that connecting the community with preservice teacher education aided in promoting understandings of sustainable living and kept environmental issues on the agenda. The four-step process implemented by the preservice teachers for SESL assisted to conceptually advance understandings of scientific causes and effects in order to propose appropriate solutions. Initiating university-community engagement required articulating visionary directions, understanding change processes, motivating potential key stakeholders, and promoting collaboration and team effort. In addition, distributing leadership aided in facilitating university-community collaboration and allowed for the implementation of a wider range of innovations. It was concluded that distributing leadership will be essential in order to sustain university-community engagement, particularly as key stakeholders in leadership roles can deploy energy and resources at levels required for successful collaborations.

Engagement of communities with universities is an investment strategy (Garlick 2000), and collaboration between a university and its wider community has become central for developing a more just and civil society (Butcher, McFadden, and McMeniman 2003). This collaboration is fundamental for establishing social capital, which is 'at the forefront of the attributes required by communities to generate viability in the global economy' (Garlick 2003, 2). Kilpatrick (2003) purports a relationship between the development of social capital and learning. Indeed, the literature emphasises the importance of developing learning communities, which aims at addressing its needs through partnerships in order to cultivate social capital (Kilpatrick et al. 2003). Learning communities facilitated through educational partnerships may also create social cohesion, capacity building and economic development (Kilpatrick et al. 2003).

There are features that assist the development of learning communities. For example, the combination of geographical locations, common interests, and community needs may lead to the formation of collaborative partnerships. Importantly, community engagement with universities can reinforce the values of education (Cope and Leatherwood 2001), which occurs most effectively when community groups and institutions have united forces to promote systematic societal change

and share (or jointly own) the “risks, responsibilities and rewards” (Himmelman 1994, 28). Effective leadership is a key for developing learning communities and implementing innovations (Allen and Wing 2003; Hargreaves et al. 2001) and can make a difference to the educational outcomes (e.g., Shields and Glatter 2003). As leadership is a creative endeavour, it may be considered an art form (Grint 2003), particularly as there is no one way to lead, and catering for unexpected situations necessitates carefully crafted flexibility from leaders (Fidler and Atton 2004). The development of community engagement with a university requires creative leadership that is generally worked within a problem-based approach (Cunningham and Cordeiro 2002), however, a university and its community needs to have a shared vision in order to forge common directions.

Leadership needs to be strategically positioned around visions for securing university-community engagement (Preedy et al. 2003). Effective educational leaders project a vision generally acceptable to all parties through common goals. This vision is largely based on collective values and beliefs so as to inspire, motivate and empower others to work toward achieving common goals (Allen and Wing 2003). Similarly, the production and articulating of shared goals require clear visions (Allen and Wing 2003). Not only should goals be explicit but so too should establishing procedures for accomplishing the goals, which includes organising schedules and personnel to be involved in university-community activities (Wiewel and Lieber 1998). Visionary directions that lead to action may aid in benchmarking community engagement in order to measure future progress (Letven et al. 2001). Indeed, a way to measure social capital is to benchmark criteria, that is, ‘to measure indicators at one point in time, measure the same criteria at another time, and compare the two’ (PASCAL Observatory 2004, 18). However, visionary directions are empty without a collective understanding of the processes for initiating university-community engagement.

Key stakeholders need to understand processes for establishing innovations, which involves understanding community values, needs, and expectations. Part of community expectations involves the inclusion of community concerns about the goals and outcomes of a potential university-community partnership (Ramaley 2001). Processes for initiating community engagement also need to consider that ‘partnerships are learning environments’ (Brukardt et al. 2004, 9), therefore, change processes need to be understood by all parties involved in the potential collaboration. Effective leaders create conditions to motivate and encourage commitment of key stakeholders to work as a group. The perspective of potential participants needs to be considered to ‘develop a unique and tailored strategy to recruit each prospective partner’ (Rubin 2002, 45). Building relationships and trust is part of the process and can aid the motivation of key stakeholders, particularly if leaders are mindful of their needs and purposes for establishing such relationships. ‘Collaboration is a planning approach that presupposes constructing relationships between parties, since planning, gathering resources, and implementing what has been planned are arrived at through joint effort’ (Wiewel and Lieber 1998, 5).

Clearly, establishing trust between a university and its community is the basis for creating long-lasting partnerships. Forming these relationships will be met with positive and negative reactions as each party aims to discover their roles and responsibilities, so there needs to be adequate time to establish such partnerships (Kriesky and Cote 2003). Understanding change processes involves continuous flexibility, compromise, and feedback in order to strengthen a partnership (Wolff and Maurana 2001), and it also requires partners to have a collective understanding of change processes and how to effectively negate innovations.

Supportive working relationships can rouse confidence in colleagues to experiment with practices (Hargreaves et al. 2001) to create ‘new theories of community engagement coupled with practical examples’ (Brukardt et al. 2004, p. 11). Effective collaboration may be facilitated through professional dialogue, but leaders need to ensure sufficient time and resources are allocated for meaningful involvement (Hargreaves et al. 2001). The leader ‘becomes a context setter, the designer of a learning experience - not an authority figure with solutions’ (Fullan 2001, 112). Yet, involving more community partners in leadership generates greater team cohesion (Pugalee et al. 2001), provided there are mutually beneficial arrangements with commonly-shared agendas. A shared agenda also shares the power and responsibility as well as the risks and rewards (Ramaley

2001). Furthermore, Ramaley claims that embracing an agenda aims to strengthen democracy, encourages responsible citizenship and civic duty, and facilitates a commitment to education.

Universities facilitating preservice teacher education have schools as their main community engagement, yet, schools can be resistant to change (Allan and Wing 2003; Wagner 2001), particularly as a large number of educational innovations have come and gone, creating scepticism among teachers (Wagner 2001). In addition, teachers have pride in developing teaching programs, and asking them to change their methods can be demoralising (Wagner 2001). It is important that teachers are supported to assist them in dealing with innovations (Hargreaves et al. 2001), as university-community 'engagement has real potential to connect higher education to critical public issues' (Brukardt et al. 2004, 16).

Australian schools are becoming more active for Science Education for Sustainable Living (SESL) with a focus on energy efficiency, recycling, and enhancing biodiversity in the community (e.g., Australian Journal of Environmental Education), and there is a push for further innovations in SESL, particularly as Australia spent more than 1.4 billion dollars on sustainable living over a period of a decade (Department of the Environment and Heritage 2004). In a school context, SESL may require students to understand current environmental issues that involves investigating and understanding scientific concepts surrounding such issues and, indeed, 'if education is critical, then teacher education is even more critical' (Åhlberg 2004, 1). SESL must commence at the preservice teacher level, however, sustainable living is 'a new area of the curriculum with virtually no exemplification of how it might actually be taught' (Summers et al. 2003, 327), even though many educators are experimenting with models to connect theory and practice in this field (e.g., Armstrong and Grant 2004; Buchan 2004; Davis and Webber 2004). Therefore, exploring innovative practices for implementing SESL will rely on the development of university-community partnerships.

### **Purpose of this study**

Determining a method for diffusing an innovation by drawing upon 'best practices' and deliberating issues with key stakeholders may lead to adequate support and adequate investment of time, energy and resources. Hence, there are two key research questions: (1) How can a university facilitate innovations to develop collaborative partnerships with its community? and (2) What types of innovations can be produced as a result of such collaboration? This study describes and analyses leadership processes for initiating community engagement with a new university campus. In particular, a key part of this study involves investigating university-community interactions for facilitating engagement between the Faculty of Education and its rural community, and presents examples of innovations in Science Education for Sustainable Living (SESL) for the development of preservice teachers' practices.

### **Context for this Study**

Caboolture Campus is an outreach campus of the Queensland University of Technology (QUT) and commenced offering a Bachelor of Education program at the beginning of 2005. The QUT Blueprint (2003) emphasised engagement as a theme to guide strategic thinking, and implementing this direction required 'partnering with other organisations' to 'open up opportunities' and 'provide ways of sharing resources or programs' (QUT 2003, 7). QUT statements and briefs provided visionary directions to guide new campus staff.

## **DATA COLLECTION METHODS AND ANALYSIS**

This study focused on qualitative data collection methods. The Faculty of Education and community had 9 meetings for establishing innovations, that is: 2 reference group meetings comprising of university staff, university students, and community members; 4 campus coordination meetings with university staff and community members; 2 district principal meetings a total of 16 principals, and a meeting that involved 4 representatives from the state education department. The minutes of these meetings, university documents (e.g., policies and blue prints), and written correspondence between key stakeholders (i.e., a total of 13 university staff, 14 preservice teachers, and 23 community participants) were analysed and coded for commonalities (see

Hittleman and Simon 2002). There were seven separate observations of one innovative program conducted as a result of university-community collaborations. In addition, interviews were conducted individually with two university leaders and two lecturers on their processes for initiating university-community engagement. Data were gathered over a one-year period on university-community collaboration for initiating innovations to enhance preservice teachers' pedagogical practices. Documentation (i.e., minutes of meetings, policies, and written correspondence), observations of innovative practices, and interviews were coded for investigating the development of university-community partnerships.

As a result of collaboration, preservice teachers were involved in innovations within three areas, that is: Information and Communication Technology (ICT), Physical Education (PE), and Science Education for Sustainable Living (SESL). The results in this study more specifically focus on SESL, which involved 14 preservice teachers, who worked in pairs to devise and facilitate science lessons to enhance 58 middle-school students' science concepts for sustainable living. Each of the following topics associated with SESL used a four-step sequence, that is, these Year 6 and 7 students were required to: (1) identify the issue, (2) explore associated concepts, (3) record and articulate understandings, and (4) brainstorm realistic solutions and/or future projects. Topics for SESL were previously brainstormed within the preservice teachers' tutorials. These topics included: sustaining frog habitats, sustaining life on Mars, chemical effects on water, renewable energy (hydroelectricity), using natural materials to produce an energy source, guarding against natural disasters, and the role friction plays on resources (e.g., car tyres). Data included analysing preservice teachers' lesson plans, lesson observations by the researcher, and preservice teachers' written reflections for enhancing their SESL teaching practices. These innovations aimed to connect an Australian outreach university with its community and, simultaneously, enhance preservice teachers' development as potential teachers.

## RESULTS AND DISCUSSION

The results will be discussed within two sections: (1) engaging key stakeholders for developing university-community partnerships for the purposes of implementing innovations, and (2) implementing innovations as a means for enhancing preservice teachers' practices.

### **Developing University-Community Partnerships**

Documents were coded for commonalities with the following themes emerging: articulating visionary directions, understanding change processes, motivating potential key stakeholders, promoting collaboration and team effort, communicating clear commitments to educational development, and distributing leadership to sustain university-community innovations. In order to articulate visionary directions, university lecturers aimed to understand the needs of potential participant. Organising meetings aided in gathering information to ascertain needs, which provided valuable understandings for articulating educational directions. Academic leadership in the Faculty of Education included establishing a focus group for preservice teachers and a reference group for school leaders (e.g., principals, deputy principals, and teachers). Each group had three meetings during the year. Initial meetings indicated a mixture of excitement, anxiety, and concerns about formulating group cohesion; nevertheless setting agendas in consultation with potential key stakeholders became a proactive medium for articulating and shaping visionary directions. These meetings focused on establishing university-community relationships for mutual benefit. For example, the community had strong interest in professional development in literacy, middle schooling, and Indigenous studies, while the university had interest in utilising school resources for developing preservice teachers' skills. These items of interest were added to the agenda and were opened for discussion for which positive results of professional development plans, Indigenous involvement, and the use of school resources came to fruition. One acting principal of a state school wrote, 'This has been a valuable two-way learning exchange'.

Presenting the university to the community allowed for university agendas to reach community agendas. For example, 16 schools within the vicinity of the university conducted district meetings. Midway throughout the year, the university agendum of community engagement had reached these district meetings for which university campus leaders were invited to attend. This allowed for more



open discussion on forming university-community relationships. Partnership needs were also clearly articulated at this meeting, and a subsequent email from the Chair expressed interest for teachers to be involved in literacy and science education seminars and workshops at the university. The Chair also stated, 'We would welcome as many student teachers as you could make available to work beside teachers in both extension and learning intervention groups'. Crucial to the university agenda was the acceptance of preservice teachers into the middle-years school, as this university campus focused on middle schooling. The Chair provided the Faculty of Education executive with contact details of the district schools so more personalised contact for organising middle-school arrangements could be created.

Not surprisingly, developing new structures and frameworks were met with positive and negative responses from key stakeholders in both university and community settings. Miscommunications occurred. One executive had misread the venue for a meeting and as a consequence missed a meeting; however this was met with an endeavour to 'try to do better next time'. Significant concerns were expressed by two university staff members about expectations for their involvement in the new campus. They had reservations about the 'extra workload' required of them to 'instigate negotiated programs', and had concerns about equity issues for the delivery of the same course across campuses; however the vision for the new campus had a middle-school focus with increased preservice teacher involvement in schools. Even so, a few preservice teachers also expressed concern about not receiving a more community-based program. These were students who, as one preservice teacher expressed, expected a 'more practical based program' and being 'out in classrooms learning the information first hand'.

Open communication from the outset was essential, and providing positive feedback to stakeholders for their involvement in university engagement encouraged further participation. Many principals had varying viewpoints and there was considerable negotiation at the reference group meetings to find middle ground. There were also some principals who did not want to be involved in the program. It was also difficult for the university to connect government and non-government schools, which only occurred at the informal talks (breakfast, morning tea, and luncheon). An evaluation of the year's efforts for attaining community engagement concluded that greater collaboration between government and non-government schools in the wider community will need to be placed on future agendas.

University executives (e.g., Vice Chancellor, deans, executive deans, course coordinators) were available to the campus community as a show of support and interest for initiating university-community collaborations. This supportive environment may have contributed to the development of positive relationships, as various community groups were present at times for such interactions. In addition, university staff initiated media releases about university-community engagement, which aimed to promote the university's presence and willingness to be involved. Change processes can be slow; yet this environment was a new setting and as such became a forum for initiating activities. It may be that stakeholders wanted to be on the ground level in order to have a firm say on educational directions.

The university took the initiative to inform potential key stakeholders of its intentions for developing innovations. Inviting stakeholders (including university and community executives) to meetings and informal gatherings helped to develop relationships and motivated them into action. To illustrate, invitations to school executives to attend an informal breakfast, morning tea, and light luncheon at early points in the year assisted all parties to become familiar with each other and allowed them opportunities to present their intentions. As a result of a breakfast talk, a deputy principal emailed 'I look forward to working closer with you and your students, as I can see huge benefits for both parties'. It was interesting to note that the same deputy principal was 'happy to be part of a discussion panel' for educating preservice teachers and noted informal meetings as a way to discuss issues; point in case 'maybe we could catch up for coffee'.

Further motivation included the formation of a focus group for preservice teachers and a reference group for community leaders. The focus group was emailed to participate in 'informal chats' to discuss 'positives and negatives of studying at the campus and how to improve things for the

future'. Responses to this meeting highlighted community atmosphere and university staff as positives. Coursework and support structures were improved as a result of these meetings. For example, measures were taken to develop library resources, and action was sought to minimise or eliminate video lectures at this outreach location.

The Faculty of Education expression of interest to have preservice teacher involvement in the schools motivated school executives to offer school placements. For example, one school responded, 'we are able to accommodate six preservice teachers', and another stated 'we will take four students [preservice teachers] with Fridays well received by staff'. Offers of providing professional development to the community also aided in motivating key stakeholders. One principal wrote, 'It was great to see around your campus and hear about your future plans. I look forward to working with you in the next phase of our partnership'. These comments were reciprocated with positive comments on the development of community engagement with the university, for example, a university academic coordinator wrote to the reference group,

These discussions were helpful in providing a framework as to how we can promote the relationships between the schools and the university. I am in the process of collating the data from your surveys and will stay in touch as to further activities with the university.

Establishing partnerships required clarity on roles and responsibilities. The first reference group meeting, which involved school executives and university staff agreed upon ensuring mutual respect, open communication, sharing of resources and teachers, facilitating opportunities for professional development, and developing benefits for all parties (i.e., preservice teachers, students, teachers, academics and the wider community). One community staff member was appreciative of university executive for making these connections with schools and wrote 'Thanks so much for establishing this relationship. I think this will be ongoing and fruitful for all'.

Individual school executives wanted university involvement for specific purposes. For example, one principal requested preservice teachers for a school innovation entitled 'Learning Engagement Online', which focused on assisting children who experienced learning difficulties. This school provided training for these preservice teachers, which further indicated an educative partnership. Two other examples included a state school deputy principal who provided a seminar for preservice teachers on the planning, implementation and review processes of her school's middle-years' program, and a principal who hosted preservice teachers' discussions on middle-school teaching and learning tasks. Another principal led the way for further funding for his school by collaborating with the university on securing resources for the preparation of preservice teachers. He highlighted the mutual benefit to the community and university by stating anticipated outcomes. For instance, he wrote that as a result of this collaboration 'teachers can increase their own knowledge thus benefiting their own professional development and encouraging lifelong learning'. He also stated that using these additional resources may enhance preservice teachers 'effectiveness within the practicums that may have the potential to increase the quality of our future teachers'. Most important was his vision to 'develop our relations with our collaborative partners'.

### **Implementing Innovations for Enhancing Preservice Teachers' Practices**

The development of a positive university–community partnership motivated lecturers to collaborate with school communities on three innovations during the year, namely: (1) involvement of teachers, students, and parents in an ICT program entitled 'The Fifth Dimension', where students used clay and technology to create stop-motion animation (claymation) over eight two-hour sessions; (2) a cohort of preservice teachers instructing middle-school students on specific PE skills over a six-week period; and (3) employing a four-step teaching sequence with preservice teachers and middle-school students for understanding Science Education for Sustainable Living (SESL) issues. Such distribution of leadership broadened the scope of the university–community collaborations for the Faculty of Education and allowed more partners to enter the relationship. Feedback from lecturers, preservice teachers, teachers, and students indicated suggestions for improvements and sufficient positive responses for these programs to continue on a larger scale the following year.

Effective communication was a key for shaping collective educational focuses. Oral and written communication to preservice teachers emphasised the importance of developing commitments to university-community-based programs and frequently presented reasons for such involvement. For example, Faculty of Education emails to preservice teachers stated 'You have a unique opportunity to learn about ICT claymation', 'This involvement with middle-school students will allow you to understand their level of PE development', and 'Here is a chance to learn more about science education in the schools'. Preservice teachers were also appreciative of university-community collaborations with one commenting on the positive 'input and impact' of these experiences for the development of future teaching practices.

One lecturer established a university-community partnership with a focus on Science Education for Sustainable Living (SESL). The involvement of middle-school students in SESL was registered as a key need from a school within the vicinity of the university. A four-step sequence was developed during university science education workshops and employed by 14 preservice teachers who worked in pairs to teach two classes of middle-school students for understanding sustainable living issues. As a main structure of the four-step process, these Year 6 and 7 students were required to: (1) identify the issue, (2) explore associated concepts, (3) record and articulate understandings, and (4) brainstorm realistic solutions and/or future projects.

SESL issues were previously discussed within the preservice teachers' tutorials (however, in an ongoing classroom setting, teachers could scaffold students' identification of sustainable living issues). The issues discussed included: sustaining life on Mars, chemical effects on water, sustaining frog habitats, renewable energy (hydroelectricity), using natural materials to produce an energy source, guarding against natural disasters, and the role friction plays on using resources (e.g., car tyres). The first three will be provided as examples of preservice teachers' development of practices as a result of their SESL innovation

### **Example 1: Mission to Mars**

Two preservice teachers' 'Mission to Mars' SESL lesson required middle-school students to consider how to sustain life on a journey to Mars. Various fabricated stimuli were presented (e.g., spaceships, spaceship supplies, maps of Mars) and essential elements necessary for life were discussed (i.e., oxygen, food, and water). Students were guided into creating a terrarium as a demonstration of their understanding of key concepts for sustaining life. Supplies were sought and the terrarium was constructed and tested to demonstrate the water cycle for sustaining plant growth.

These two preservice teachers agreed in their critical self-reflections that certain aspects worked well in facilitating the lesson. They claimed that inspiring students with imagination and hands-on experiences motivated them to explore the topic. One preservice teacher stated, 'The Mission to Mars idea tweaked their interest and gave the discussion about oxygen and water a purpose, which was enhanced by the spaceship prop.' The other claimed,

Both groups enjoyed the hands-on aspects of making the terrarium and were able to offer predictions of what might happen - relating it to real life. The students were able to see the result of the terrarium left in the sun and were able to explain to us in their own words the cycle taking place.

### **The first preservice teacher added:**

The terrarium was a really BIG hit with both groups [Year 6 then Year 7]. While the kids started with a limited idea of the water cycle as far as condensation, precipitation etc goes, after questioning at the end it seemed they learnt a lot more about it.

These preservice teachers also proposed ways to improve their teaching practices. One suggested,



It may have been beneficial to ask students to draw a picture explaining the water cycle prior to the activity in order to extrapolate their existing knowledge and give them an opportunity to make any necessary adjustments or improvements to their pictures after their observations of the terrarium.

They also claimed the link to sustainable living was perhaps a little weak and there was insufficient time (45 minutes per lesson) to discuss threats to the vital elements for survival, that is, oxygen, food, and water. Finally, they proposed a more effective line of questioning in order to elicit the links between the activity (making a terrarium) and sustainable living.

### **Example 2: Chemical Effects on Water**

The two preservice teachers involved in chemical effects on water focused on water pollution, and acids and alkali science-based experiments as their SESL innovation. Using an interactive learning approach (see Fler and Hardy, 2001), students tested pH levels with red cabbage water and an assortment of household chemicals (e.g., detergent, chlorine, bleach, shampoo). The results of the various pH levels on the scale 1-14 indicated by the litmus paper test were graphed using a histogram (x axis = chemical; y axis = pH scale 1-14), which appeared as the most innovative aspect of the lesson. Year 6 students then discussed the graph and the effects of household chemicals (i.e., acids and alkali) on water. A relationship was drawn between the chemical's usual purpose(s) and the possible chemical effect on the water. One student produced a surprised reaction as he claimed testing this water and observing the negative results would impact on his need for wanting to drink water.

These preservice teachers reflected positively about their SESL lesson, and reported that the students were fully engaged in the pH testing of various water samples. One stated, 'the students worked so well and demonstrated a good understanding of how chemicals can affect the water supply.' The preservice teachers also claimed that recording the pH levels (i.e., scale 1-14) as a graphical representation provided a powerful visual picture that activated enthusiastic student responses. There were minor feedback directions from the lecturer and no overly critical comments about this lesson and, indeed, researchers' observations of this lesson confirmed sound teaching practices.

### **Example 3: Green Frog Habitats**

Four middle-year students were invited to design and construct a green frog habitat from natural materials as part of SESL. Two preservice teachers provided written and oral accounts of critical reflection on their SESL teaching practices for this lesson. They claimed the concept of sustainability was 'a little difficult for Year 6 students to understand'. However, they reworked the lesson and conducted it with a small group of Year 7 students, to which one preservice teacher stated, 'Reworking the lesson for Year 7 was far more successful and the concepts were more readily understood'. Considerations for improving the lesson for the Year 6 students included exploring the materials in a more sequential way. One preservice teacher likened it to developing an artwork, that is, 'starting with the canvas, filling in the background, presenting the main focal points, and then adding the detail'. The preservice teachers also claimed that further input with charts, books and other resources highlighting the green tree frog's habitat may have been more valuable for Year 6 students' conceptual development of SESL.

Connecting the community with preservice teacher education aided in promoting further understandings on sustaining life and kept environmental issues on the agenda. The four-step process implemented by the preservice teachers for SESL also assisted to conceptually advance understandings of scientific causes and effects in order to propose appropriate solutions. Importantly, these preservice teachers reflected on their SESL practices and, in all but one case, suggested ways for enhancing the teaching and learning environments.

## **SUMMARY AND CONCLUSION**

Institutions need to develop their own academic priorities with clear goals for achieving those priorities (Holland 1997). Articulating visionary directions for initiating university-community engagement provided fundamental frameworks for university personnel, particularly when such

visions consider the needs of the university and its community, which are reflected in the university's goals (Wolff and Maurana 2001). However, new campuses need to shape these goals to suit the individual contexts, which require considerable collaboration from key stakeholders. As about one third of the 160 campuses in Australia are non-metropolitan (DEST 2002, 1), outreach campuses need to be proactive in their establishment of collaborative university-community relationships. Moreover, university personnel need to understand how to motivate potential key stakeholders in order to form partnerships. This study indicated that mutually beneficial arrangements such as sharing of resources and providing services can motivate both university staff and community stakeholders. Informal gatherings and formal meetings can further assist in establishing, developing, and consolidating collaborative partnerships. Indeed, informal gatherings where a university hosts for the community may prove to be highly valuable in making connections between government and non-government schools.

Promoting university-community collaborations and team efforts require clarity on roles and responsibilities. Open communication aids in fostering collaboration particularly when shared goals have been agreed upon. Establishing a positive environment can contribute to relationship building but it also needs to air concerns, problems, and issues in order to move the relationship forward, particularly for aligning goals among partners. Forming partnerships can be based on common goals to address significant issues (e.g., SESL), and through meetings, conferences and other forms of engagement promote collaborative team efforts. Undoubtedly, a key factor for success is effective leadership (Fullan 2001). In this study, the impact of creating positive working environments aided in developing collaborative partnerships, however, establishing such partnerships may prove easier than maintaining them over periods of time. As the university extends itself further into the community through significant interactions and media coverage, more and more university involvement may be expected by the community. The difficulty will be staffing areas of need; hence distributing leadership will be essential. To cater for the range of potential university-community interactions will require empowering university staff and community members in leadership roles. The university (and/or community) would need to facilitate these leadership roles through professional development with an aim to create autonomy and sustainability. Constraints that surround such proposals will require more meetings and further interactions with the wider community.

A shared agenda occurs through effective communication where key stakeholders consider the various viewpoints. Queensland University of Technology (2005) have now established a plan for community engagement, and this articulation of commitments to educational development can further facilitate a shared agenda. Providing reasons for involvement in particular innovations and deliberating concerns and issues can shape collective educational focuses, and may also develop new theories through practical experimentation (see Brukardt et al. 2004). Consultation on processes and projects must be open to critical discussion as this aims to gain trust for securing further university-community engagement.

In conclusion, the initial facilitation of community engagement largely rests upon university leaders to connect key stakeholders. The process for initiating engagement involves articulating visionary directions, understanding change processes, motivating potential key stakeholders, promoting collaboration and team effort, and communicating clear commitments to educational development. Importantly, distributing leadership may help sustain university-community innovations at small outreach campuses, as more personnel in leadership roles can provide support to continue such innovations.

## REFERENCES

- Åhlberg, M. (2004). Concept Mapping for Sustainable Development, Proceedings of the First International Conference on Concept Mapping, Pamplona, Spain.
- Allen, N. and Wing, L. (2003). Leadership for a Changing World. In G. Solomon, N. J. Allen, and P. Resta (Eds.), *Toward Digital Equity: Bridging the Divide in Education*, pp. 156-174, Pearson Education, Boston, MA.
- Brukardt, M., Holland, B., Percy, L. and Zimpher., N. (2004). Calling the Question: Is Education Ready to Commit to Community Engagement? Report from Wingspread conference, University of Wisconsin.
- Buchan, J. (2004). Successful Environmental Education: Adapting to the Educational Habitat. *Australian Journal of Environmental Education*, 20(1), pp. 45-55.
- Butcher, J., McFadden, M. and McMeniman, M. (2003). Benchmarking Community Engagement: Identifying Questions for Universities, Communities and Students, Paper presented at the University and Community Engagement Forum, University of Western Sydney, NSW.
- Cope, G.H. and Leatherwood, M.L. (2001). Maintaining a Culture of Engagement: Challenges in an Evolving Institution. *Metropolitan Universities*, 12(4), pp. 80-99.
- Cunningham, W.G. and Cordeiro, P.A. (2002). *Educational Leadership: A Problem-Based Approach*, Allyn and Bacon, London.
- Davis, R. and Webber, L. (2004). Enjoying our Backyard Buddies: Social Research Informing the Practice of Mainstream Community Education for the Conservation of Urban Wildlife. *Australian Journal of Environmental Education*, 20(1), pp. 77-87.
- Department of the Environment and Heritage. (2004). *Sustainable Development Critical to our Future*, Canberra, Australia. Retrieved 16 April, 2006, from <http://www.deh.gov.au/index.html>
- Fidler, B. and Atton, T. (2004). Development of Leadership Thought and its Application to Schools. In B. Fidler and T. Atton, *The Headship Game: The Challenges of Contemporary School Leadership*, pp. 21-38, Routledge Farmer, London.
- Fleer, M. and Hardy, T. (2001). *Science for Children*, Prentice Hall, Sydney, Australia.
- Fullan, M. (2001). *Leading in a Culture of Change*, Jossey-Bass, San Francisco, CA.
- Garlick, S. (2000). Engaging Universities and Regions: Knowledge Contribution to Regional Economic Development in Australia, Evaluations and Investigations Program, Department of Education and Training and Youth Affairs, Canberra.
- Garlick, S. (2003). Benchmarking 'Good Practice' University-Region Engagement Efficiency. Inside Out Conference on Higher Education – Proceedings, University of Queensland, Brisbane, Australia.
- Grint, K. (2003). The Arts of Leadership. In N. Bennett, M. Crawford and M. Cartwright, (Eds.), *Effective Educational Leadership*, pp.89-108, Paul Chapman Publishing, London.
- Hargreaves, A., Earl, L., Moore, S. and Manning, S. (2001). *Learning to Change: Teaching Beyond Subject and Standards*, Jossey-Bass, San Francisco, CA.

- Himmelman, A.T. (1994). *Communities Working Collaboratively for a Change*. In M. Herrman (Ed.), *Resolving Conflict: Strategies for Local Government*, pp. 27-47, International City/County Management Association, Washington, DC.
- Hittleman, D.R. and Simon, A.J. (2002). *Interpreting Educational Research: An Introduction for Consumers of Research*, Prentice-Hall, New Jersey.
- Holland, B. (1997). *Analyzing Institutional Commitment to Service: A Model of Key Organizational Factors*. *Michigan Journal of Community Service Learning*, 4, pp. 30-41.
- Kilpatrick, S. (2003). *The Role of VET in Building Social Capital for Rural Community Development in Australia*, Centre of Research and Learning in Regional Australian Discussion Paper, University of Tasmania, Tasmania.
- Kilpatrick, S., Barrett, M. and Jones, T. (2003). *Defining Learning Communities*, Centre for Research and Learning Discussion Paper, University of Tasmania, Tasmania.
- Letven, E., Ostheimer, J. and Statham, A. (2001). *Institutionalizing University-Community Engagement*. *Metropolitan Universities*, 12(3), pp. 63-76.
- PASCAL Observatory. (2004). *Place Management, Social Capital and Learning Regions*. Hot Topics Paper. PASCAL Observatory, RMIT University and University of Stirling.
- Preedy, M., Glatter, R. and Wise, C. (2003). *Strategic Leadership and Educational Improvement*, Open University Press, London.
- Pugalee, D. K., Frykholm, J. and Shaka, F. (2005). *Diversity, Technology, and Policy: Key Considerations in the Development of Teacher Leadership*, ERIC Clearinghouse for Science, Mathematics, and Environmental Education, ERIC reproduction no. ED465600.
- Queensland University of Technology. (2003). *QUT Blueprint: QUT Institutional Plan, Draft Consultation*, Queensland University of Technology, Brisbane, Queensland.
- Queensland University of Technology. (2005). *Caboolture Campus: 2006-2008 Plan*, Queensland University of Technology, Brisbane, Queensland.
- Ramaley, J. (2001). *Why do We Engage in Engagement?* *Metropolitan Universities*, 12(3), pp. 13-20.
- Rubin, H. (2002). *Collaboration's Life Cycle*. In H. Rubin *Collaborative Leadership: Developing Effective Partnerships in Communities and Schools*, pp. 43-51, Corwin Press, Thousand Oaks.
- Shields, C.M. and Glatter, R. (2003). *Good Intentions are not Enough: Transformative Leadership for Communities of Difference*, Scarecrow Press, Oxford.
- Summers, M., Corney, G. and Childs, A. (2003). *Teaching Sustainable Development in Primary Schools: An Empirical Study of Issues for Teachers*. *Environmental Education Research*, 9(3), pp. 1-24.
- The Department of the Environment and Heritage. (2004). *Sustainable Development Critical to Our Future*. Canberra, Australia. Retrieved 16 April, 2005, from <http://www.deh.gov.au/index.html>
- Wagner, T. (2001). *Leadership for Learning: An Action Theory of School Change*. *Phi Delta Kappan*, 82(5), pp. 378-383.
- Wiewel, W. and Lieber, M. (1998). *Goal Achievement, Relationship Building, and Incrementalism: The Challenges of University-Community Partnerships*, College of Urban Planning and Public Affairs, Chicago.

Wolff, M. and Maurana, C. (2001). Building Effective Community-Academic Partnerships to Improve Health: A Qualitative Study of Perspectives from Communities. *Academic Medicine*, 76(2), pp. 166-172.