

Attempting Environmental Education Reform: Initiation and Implementation of Programmatic, Outdoor Environmental Learning in Public School Curricula

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Abstract

This research examines the initial stages of a larger process of change that is shifting an Australian primary school's focus toward a holistic learning community that incorporates conceptually based, programmatic environmental learning into its core curriculum. The following illustrates how a small primary school, led by a change agent who is conscientious of the nature of school change, has striven to rise above the requirements set forth by government-mandated environmental education in New South Wales, Australia. The reform effort, Environment Woodridge, is deeply rooted in sustainability and modern learning theory. This analysis focuses on the conditions and strategies that have allowed them to successfully navigate the stages recognized by Fullan (2001) as initiation and implementation.

Environmental Education Reform

Since the advent of the industrial revolution the human race has experienced an astronomical increase in the potency and rate of change that has occurred in science, technology, and culture. Innovations of the 20th century got the gears, turbines, and wheels of change turning at a rate that has grown exponentially from one decade to the next. The results of this acceleration are easily visible in the declining health of our planet. Ineffective environmental education efforts in the previous century have left educators and researchers scrambling to answer "What Works" questions (Slavin, 2004). To little avail, many dollars and research hours have been spent examining environmental behaviors and generating programming to stem the tide of earth degradation. The new science of learning (Bransford, Brown, and Cocking, 2000) has largely been excluded from the enactment of environmental education in public schools. While educators have emphasized the importance of teaching in the context of the natural world when building environmental understandings (Johnson, 2003; Nabhan & Trimble, 1994; Van Matre, 1990), students are often expected to gain appreciation and knowledge of the earth through decontextualized curricula taught in buildings devoid of natural elements.

It is clear that our response to the need for environmental education has belittled the problems we are facing. It is time for a change. Determining "what works" to positively impact environmental behavior is a necessary component to the construction of effective programs. While this line of inquiry has received much emphasis, little attention has been given to building greater understandings of how effective environmental education reform might be manifested on the local level. Thus, a debilitating disconnection remains between research and practice. After all, it does little good to decipher which methodologies are most effective if we do not understand the conditions under which innovations are most likely to succeed. No matter how effective a methodology has been proven, it is up to the members of individual learning communities to successfully bring reforms into their school. Greater emphasis should be placed on building understandings of how environmental programming that will promote lasting change on the local level may be successfully implemented.

Environmental Learning

Some educators (Selby, 2000; Stevenson, 1993; Van Matre, 1990) have sensed the ineffectiveness of mainstream environmental education efforts and have worked to provide programs that are grounded in the new science of learning (Bransford et al., 2000). The Institute for Earth Education, a non-profit organization founded by Steve Van Matre in 1974, offers earth education as an alternative to environmental education. Their work focuses on the development and dissemination of earth education programs that strive to help people understand the processes of life on earth and how their lifestyles impact those processes. These experiential programs incorporate conceptual understandings, immersion in outdoor settings, and the magic inherent in the wonder of nature to foster deeper feelings of connection with our environment.

The introduction of alternative environmental education programs has broadened perspectives of how people learn about the natural world. Many educators are bringing together pedagogical styles that incorporate a diversity of methodologies and philosophical perspectives. The term “environmental learning” is used in this paper to represent educational efforts, such as earth education, that draw from this diversity and emphasize pedagogy informed by the new science of learning (Bransford et al., 2000).

Although this diversity has added depth to the field, we still know very little of processes that bring about effective change in environmental programming. How might a public school bring environmental learning that emphasizes outdoor education successfully into their core curriculum? This research strives to answer this question by examining the change processes of an Australian primary school that is bringing conceptually based, programmatic environmental learning which emphasizes outdoor context into its core curriculum. These findings represent the conditions and strategies that have allowed the reform effort to move successfully through the stages recognized by Fullan (2001) as initiation and implementation.

School Change

Lasting and meaningful change in education is difficult to achieve as a myriad of factors affect a learning community’s ability to rise up and move forward in the process of change. Research on educational reform over the past decades has identified a set of conditions that strongly increase the success of change efforts (Cochran-Smith & Lytle, 1993; Fullan, 1997; Fullan & Hargreaves, 1996; Hargreaves, 1992; Lieberman, 1995; Mc Laughlin, 1991):

- Collaborative cultures that foster professional learning communities
- Instructional practices that are relevant to and fully understood by teachers and students alike
- Instruction that is linked to the needs of individual students as well as the standards of the external community

The establishment of these conditions and thus the success of school change rest largely on the shoulders of facilitators who accept the role of change agent. Rust and Freidus (2001) define a change agent as an individual who upholds the following critical roles during the process of change: negotiator, nurturer, teacher and learner, and curriculum developer. However, as much education reform research indicates, in order for change to be effective, an individual who assumes these critical roles must first have a deep understanding of school change itself and of how profoundly interpersonal processes affect change. Thus, Fullan (1993) defines a change agent as a leader who is “self-conscious about the nature of change and the change process” (p.12). Going further, it is easy to conceive that having an understanding of school change research and theory would enhance the consciousness Fullan speaks of. These definitions point

to the broad range of understandings, skills, and personality traits vital to leading the complex process of educational reform.

Change agents who wish to move successfully from initiation to implementation must carefully consider the local dynamics within the institution when deciding how to go about initiating change. For the purposes of this research, Fullan's (2001) definitions of initiation and implementation are being employed; initiation being the processes of decision making and action that lead to the adoption of a change effort and implementation involving the first experiences of putting a change in to practice (usually first two to three years). There are no hard and fast guidelines to this practice as the uniqueness of each institution will present critical factors (Fullan, 2001). What works for one school may not work for another. However, Fullan does offer this advice when attempting change at the local level. Change agents must develop an understanding of the psychological dynamics and interactions between individuals in the learning community before deciding which strategies for change would be most effective (1985).

Special attention must be paid to educators. Teachers must feel that they will be supported by those in leadership roles in order to ease anxiety that is both caused by change and the ever increasing demands of their job (O'Connell, Ely, Kransnow, & Miller, 2001). Within an institution, teachers' receptiveness to new practices and beliefs about change are key factors. Hargreaves and Fullan (1998) argue that all serious reform efforts are bound to fail if the quality and morale of teachers is not taken into serious consideration. Going further, Evans (1996) proposes that any serious change effort must be coupled with strategies to revitalize staff members. Change agents must act to ease the pressure felt by teachers as they are perilously positioned as the fulcrum between internal and external forces within education.

Given these external forces, Hargreaves and Fullan (1998) suggest "moving toward danger" by drawing outside forces into a collaborative alliance with the school. Thus, the need for collaboration and alliances exists both inside and outside of the school. However, collaboration doesn't just happen- time and much facilitation are essential to the process. This research offers a window into the strategies employed by change agents who have demonstrated consciousness of school change literature, awareness of the psychological dynamics of change, and an understanding of the complex nature of their leadership roles.

Context of the Study and Data Sources

Woodridge Primary School is a public school in the Blue Mountains located just west of Sydney in New South Wales, Australia (NSW). The school consists of 171 kindergarten through sixth grade students from 132 families and 13 staff members, including one principal, seven teachers, one librarian/teacher, and four support staff. At the time of this study, all but one teacher had been in education for over ten years. The school property is composed of 13.5 acres of which five acres are used for buildings and playground areas and the rest is bush. Woodridge is a small village bordered on either side by two more small, mountain villages.

Data collection occurred over a span of four weeks while the researcher was immersed in the Woodridge learning community. Interviews were conducted using Piaget's semi-structured interview format (Kahn, 1999). The findings presented here include tape recorded interviews conducted with 14 students, eight parents, six teachers, and two administrators (past and present). The data collected from these interviews centered on learning community members' perspectives of how well the school has dealt with reform in the past as well as how the school is currently succeeding with the initiation of new environmental learning programming. Interviews were coded through microanalysis (Strauss & Corbin, 1998).

Document analysis of government mandated policy statements, school initiatives, and newsletters offered further insight into past and present reform efforts. Along with this, extended observations of the school and community members have provided rich field notes. Observations incorporated data collected from 63 subjects in the Woodridge Public School learning community. This included the previously mentioned parents, staff, and administration as well as forty-seven students between the ages of 10 and 12 who participated in new environmental learning programming. Learning community members were observed during staff meetings, professional development sessions, parent/community committee meetings, throughout the implementation of the new Earthkeepers program, and while conducting the everyday business of the school.

The researcher was an active participant in the implementation of Earthkeepers, a newly adopted earth education program designed to help upper-elementary students understand the processes on earth that make life as we know it possible. Immersion in this learning community and participating in their change process allowed the researcher to take a deep look at how change strategies implemented by the previous principal created a culture of change that is enabling current reform efforts.

School Culture/Change Culture

Creating the Will to Change

Prior to the current principal's arrival at Woodridge and the initiation of new environmental programming, the school had undergone five years of continual change. The changes that took place during this period transformed both the physical appearance of the school and the teaching and learning that was happening within it. Buildings were renovated, additions were made, and the principal, Robert Smith, pushed to modernize classroom pedagogy.

Upon his arrival, Principal Smith found a highly critical community and a teaching staff with low morale due to constant problems. According to Smith, the previous principal had retired early due to continuous conflict with the community. Technology within the school was antiquated and out-dated pedagogy was being used by some of the faculty. Along with this, the school was due to begin a 2.5 million dollar building upgrade that would leave them continually scrambling for space during the academic year.

Principal Smith demonstrated an acute understanding of the psychological dynamics of change by immediately working to build teacher morale and drawing parents and community members into the school. He spent tremendous time and energy getting parents and teachers "onside" before acting to reform outdated pedagogical strategies, pushing for innovative assessment strategies, or seeking funding to integrate technology throughout the curriculum. In his own words:

I was looking at a staff that was excellent but had very little professional development in the way of teaching and learning, and my focus has always been kids and teaching and learning. I'm not an administrator, which is what the system really wants, an administrator; someone who sits in the office shuffles papers and is really good at those issues. I might get out and stir up the community, stir up the children, and certainly stir up the teachers, not only in a professional way, but stir them up so we can form some teamwork and close ties... We worked around rather difficult circumstances, but in that time we became a school of excellence in celebrating morning teas and lunches. Quite

often I would cook lunch or cook a morning tea or bring morning tea in to say thank you. So, the staff started to feel like a staff that was valued. The community started to see what the staff was doing. (20/3/04)

Although Principal Smith was beginning to see the teachers' confidence growing, the staff was still being met with much resistance from the parental community. Traditional beliefs held by the majority of parents slowed the change process and continued to incite conflict. Through continuing to encourage open communication with these parents, a small group of parents began to see value in the innovations Smith was calling for. Principal Smith asked these individuals to come forward, make their voices known, and act as leaders in the school. Thus, a core group of parents became more involved with school governance issues. This, combined with the teachers inviting parents into their classrooms, upon Smith's encouragement, led to a snowball effect that started swaying the attitude of the larger community toward supporting their teachers and administration. Robert Smith's continual celebration of the teachers' successes and the new found support of the community bolstered teachers' belief in their capacities. Thus, they were led to feel more confident in taking the risks involved in changing their teaching styles and growing as professionals.

Teachers as Leaders & Professional Development

After successfully building bridges between the teaching staff and community, Smith set out to further revitalize the faculty and bring innovative pedagogy as well as technology into the school. Smith's understanding of the vital role professional development can play in developing teachers' understandings of pedagogical innovations and building teamwork and morale, led him to set aside \$10 000 for staff training. Professional development became the single largest item within his global budget. Furthermore, he would later mobilize to gain \$5000 from an innovation grant as well. These monies were used to send four faculty members out of state to leadership camps. Along with this, the entire teaching staff took an extended trip to Victoria to visit a school that had been recognized for innovative pedagogy. To further allow for collaboration and teambuilding, release time was scheduled for afternoon discussions among the staff and visioning for the school. A veteran teacher shared these reflections of the role professional development played in the school's change process:

We started about five years ago with the arrival of Robert Smith, our principal. He felt that we needed some big changes in our presentation with the students- in the way our classrooms were structured. So, we went about the process of change. He started by taking four of us away to a leadership camp to talk about change and change management so that we got more confident in being able to do it (implement change) with other people... we would do things and then come back to report on what we've done. Which was really good, yes... because we were very traditional prior to that and a lot of chalk and talk... So, when we came back we had a concerted effort to changing our style of teaching. (Teacher 7, 17/3/04)

After four teachers had commenced leadership training, plans were laid for the entire staff to visit an out-of-state school. Smith arranged for all expenses to be paid and asked in return that each

teacher make at least one change in their pedagogy upon their return. Another veteran teacher shared these impressions of the roles teachers played in the change process:

This was when Robert was here... he thought the changes should be made, and we (teaching staff) were involved in looking at what we wanted to do as teachers... And when it was all said and done, yes, we were happy to have change, and we didn't mind having change and we weren't that frightened of it provided that no one was going to stand there and judge us if we failed. And there was also a carrot there because Robert said, "Well, we can go and see what's happening in other places, but then I want to see that you've done something, no matter how small it is." And he also had the philosophy of as long as we're going in the same direction, it doesn't matter how quickly we move. (Teacher 2, 18/3/04)

Along with receiving specialized training in becoming leaders in school change, teachers at Woodridge were continually called upon to be active participants in decision making and problem solving. They were given time and space to decide which aspects of their pedagogy they wanted to alter, and thus felt more deeply connected to the process of innovation. The principal spoke often of having his ideas shot down and responding, "Alright, if you don't like my idea, you think of something better (20/3/04)." By allowing teachers to openly voice arguments and follow their own instincts a climate of collaboration was created. Teachers became empowered to lead reform efforts along side the principal. Through carefully laying the foundation for effective change this dynamic change agent cultivated a school culture that openly and effectively embraces innovation and reform.

Continuing to Embrace Change

During the initial interviews with both James Sterling, the current principal, and Robert Smith, each made references to school change literature. When asked to expand upon their philosophy of how to bring about effective school change, both quoted the work of Michael Fullan. It became apparent that the hiring committee at Woodridge had selected a replacement for Smith who shared similar beliefs as well as a passion for innovation.

Principal Sterling has continued the tradition of communication and collaboration established at Woodridge. However, he has worked to expand beyond the school walls by drawing several outside agencies and organizations into collaboration with the Environment Woodridge Project, the most recent reform effort. He has striven to continue creating staff development opportunities for the teachers at Woodridge so that they may deepen their understanding of modern learning theory as well as how it can inform their teaching and better prepare students for the 21st century. Along with this, he has allowed time and space for teachers to make choices and move at a pace they are comfortable with. Going further, he chose to avoid initiating any major change efforts until he had been in the school for one year and had sufficient time to develop an understanding of the psychological dynamics of the learning community.

Environment Woodridge

Overall, the project is striving to promote understanding of the natural systems of the planet, build positive feelings toward the natural world, restore the wilderness area within the school property to a pristine state, and encourage the sustainable use of resources within the

school and community. The aims as stated in the principal's summary of the project are as follows:

We Aim To:

- Become a model for other communities to work together for the greater good of all.
- Develop knowledge and deepen feelings for the natural world that will reside within us for a lifetime.
- Become as sustainable as possible over the next 3 years while maintaining high educational aspirations and outcomes.
- Provide ongoing educational programs that will develop better understandings and feelings about the natural systems of the planet and their connection to our daily lives.
- Develop a sense of place within the Woodridge community.

Efforts to become more sustainable were exemplified by future projects including an “environmental audit of water and electricity usage,” the monitoring of school waste production, and recycling. Projected curricular reform will involve integrating programmatic, out-door environmental learning into the core curriculum at each grade level. Earthkeepers was the first of these programs to be implemented.

Earthkeepers (Van Matre & Johnson, 1987) is an earth education program for children between the ages of 10 and 12 years old that strives to help students understand four key ecological concepts; the flow of energy, the cycling of matter, the interrelating of life, and the changing of forms. The program incorporates a “feeling component” which helps students to build an affective connection to nature as well as a “processing component”. This processing component emphasizes the building of conceptual understandings and encourages students to transfer environmental learning into their everyday lives, thus leading to more environmentally sound behavior. Students engage in a three-day, outdoor immersion experience which acts as a springboard for connecting the learning to core curricula once they return to the classroom.

Initiation and Implementation

The changes related to environmental learning set forth by Environment Woodridge transcend the most recent NSW environmental education mandate. Unlike the mandate, this new environmental curriculum emphasizes a programmatic approach that strives for conceptual understandings. Environment Woodridge has been enthusiastically embraced by the local learning community. The ease with which this reform was initiated and implemented indicates that the school is continuing to successfully move forward with change processes. When asked to characterize how the learning community deals with change, many respondents spoke of critical examination prior to engaging in change. The teachers, in particular, explained that they were weary of the “bandwagon effect” and the tenuous nature of trends in education. Principal Sterling spoke of avoiding “blinding vision” and allowing staff members to come to their own conclusions rather than just accepting his directives (26/3/04). He also encouraged parents to examine initiatives and share their opinions. Thus, it was clear that this learning community carefully scrutinized proposed changes before deciding as a group whether they felt students would benefit before moving forward.

The current principal still perceives moderate resistance from some of the parental body but has worked to continue bringing parents into decision making processes. Along with this, he

has moved at a pace determined by the learning community and has encouraged parents to understand that, in order to prepare students for the 21st century, the education their children receive must be different from their own experience. Overall, the parents interviewed felt confident about the school's ability to implement effective change. There was a moderate concern expressed by three staff members and one parent that a conservative bent within the parental body may hamper school change at Woodridge. As this concerned parent stated:

I think there's a core group of people who are involved parents- who are involved in the school and really want to support the teachers however they possibly can. I think that the other part of the community is happy for that group to help. So there's a real hands-on group. I think there's another part, a majority of the school community, who are happy for change to go ahead but not so certainly involved in it. I think we're quite conservative, generally...So, I think there probably is some resistance to change. (Parent 4, 22/3/03)

While this parent speaks of "some resistance to change," his tone reinforces the positive influence exerted by a core group of parents who have collaborated in school change processes. Upon the implementation of the new environmental learning programming, the reform effort met no resistance. Finally, students interviewed felt the new programming was a great addition to their school. Thus, the environmental learning reform appears to be off to a solid start.

Discussion

Through drawing parents and teachers into collaboration and building staff morale, Robert Smith defused conflict and created the will to change. By encouraging teachers to act as leaders and grow as professionals, the staff became revitalized and proceeded to bring innovative pedagogy and technology into their classrooms. Through carefully laying the foundation for innovation, this change agent was not only able to create change but manifested a school culture that continues to embrace change. Thus, he paved the way for current environmental education reform efforts. Upon Smith's resignation the hiring committee chose a like-minded change agent who has acted to ensure the perpetuation of this change oriented culture.

Currently, teachers are continually willing to mobilize and move forward with changes they feel will benefit learners. A collaborative process of discussion and problem solving creates the foundation for the adoption or refusal of new initiatives. Although the choice to move forward with change is not taken lightly at Woodridge, when a decision to implement reform has been made these teachers collectively embrace the process. It is clear that the majority of parents I interviewed are very confident in the school's ability to successfully navigate this process. Thus, through the work of two change agents who are conscious of school change processes and literature, a school culture that embraces change continues to thrive at Woodridge.

The findings of this research clearly reinforce what school change literature has helped us to understand about successful reform processes. Going beyond this, it is an illustration of what has worked for a school that has striven to transcend state-mandated environmental education. It is a testament to dynamic changes that can occur at the local level when a conscientious change agent empowers teachers and parents to become leaders in change processes. When administrators, teachers, and community align in change processes the entire culture of a school may be impacted in ways that promote continual innovation.

This has been apparent through the successful initiation and implementation of Environment Woodridge. The strategies chosen by the change agents discussed herein are a direct result of understanding and implementing aspects of school change literature. This research demonstrates that these strategies were highly effective implying that the study of school change literature could increase the effectiveness of environmental education reform efforts. Further studies of how successful environmental education reform occurs could work to bridge the gap between research and practice.

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