

Conference Strand: Research Symposium

The Effect of the Action Research and Community Problem Solving Model on Graduate
Inservice Teachers and Environmental Educators

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Abstract

A sustainable future depends on citizens who are empowered to work together to take action. The goal of this research was to assess the Action Research and Community Problem Solving Model by Stapp, Wals and Stankorb (1996) for its effects on students' sense of community empowerment. The model was used in a college level environmental education course in the spring of 2005 comprised of 12 students. The steps of the ARCPS model were integrated into each session of the course. The community problem the students identified was the lack of campuswide involvement in environmental awareness and issues. To resolve this, students created an interactive website to promote environmental literacy and civic engagement (events.siu.edu/green). Several of its components are an eco-quiz, a seasonal wildlife photo contest, a nature writing section, a listing of environmental films, books, and local environmentalists and an ecycle section to promote reuse of materials through an online local exchange. At the completion of the ARCPS process, students' self-reported levels

of community empowerment were significantly higher. Further research into Classroom Community Empowerment will help environmental educators fine tune programs and courses to promote stronger community empowering skills and values.

Paper

At a time when environmental problems are more pervasive and more serious, environmental educators must focus on educational models that enhance environmental empowerment and action skills. A systemic look at the classroom and school community is essential in teaching students how to work together and to feel positive about their possible impact on needed changes in their environment. In science education, social constructivist models are widely accepted and promoted. Lessons focus on inquiry-based instruction and teachers ideally should promote constructivist variables such as personal relevance to the subject matter, experiential knowledge, a student voice in course planning and methods, shared control of the learning environment and student negotiation where students explain and justify ideas to each other.

One model in environmental education that is similarly based on social constructivist epistemology is the Action Research and Community Problem Solving model described in the publication “Environmental Education for Empowerment: Action Research and Community Problem Solving by Stapp, Wals and Stankorb (1996). This model is copyrighted and published by the Global Rivers Environmental Education Network, GREEN (www.green.org/). The GREEN program helps students protect the rivers, streams and other vital water resources in their communities through hands-on, scientific learning and engaged civic action. An evaluation of the GREEN program done

by Brandeis University shows student gains in civic action skills and improved understanding of issues. Steps in Action Research and Community Problem Solving (ARCPS) process are:

1. Community Environmental Inventory – students identify local environmental problems, threats in their community as well as the strengths in that community.
2. Issues Selection – Students sort through the problems listed and collectively identify an issue to further investigate. Often this involves redefinition of the problem.
3. Policy and Community Practice Research – Students identify and analyze relevant public and private policies and community practices and learn about the different perspectives on the issues.
4. Option for Influencing Policy & Practice - Identify project options for affecting change.
5. Planning and Taking Civic Action - Students develop and implement the plan of action.
6. Looking Back and Ahead – Students assess the project and the action process, identify next steps for addressing the problem and celebrate success.

In this study, the ARCPS process was used in a graduate Environmental Education course of 12 members. Prior to the beginning of the ARCPS process, participants were asked to anonymously complete the 16-item, Likert type, 6-point scale “Classroom Community Empowerment” instrument. This instrument was adapted from the research of a sociologist, Phil Bartels, who developed a set of 16 elements of community strength to guide sociologists as they assist poor or threatened villages in need assistance. The pre- and post-test results are reported with each variable in the table below.

This preliminary study found significant changes on each empowerment variable ($p < .01$) from the initial class session to final class session. Variables and data are found in the table below. While the ARCPS model does promote community empowerment variables, further research is needed to further clarify and define Classroom Community Empowerment and the teaching strategies and teaching environment that assist its development.

Table 1. Sixteen Elements of Classroom Community Empowerment*

	Pre test	Post test
1. Altruism What is your level of altruism for members in the group? <u>Altruism</u> . The proportion of, and degree to which, you are ready to sacrifice benefits to yourselves for the benefit of the community as a whole (<i>as reflected in degrees of generosity, individual humility, personal sacrifice, communal pride, mutual supportiveness, loyalty, concern, camaraderie, sister/brotherhood</i>)	2.5	4.9
2. Common Values To what degree do you feel your values are commonly held by the group? <u>Common Values</u> . The degree to which members of the community share values, especially the idea that they belong to a common entity that supersedes the interest of members within it;	4.3	4.8
3. Communal Service To what degree do you feel the class as a group has developed or maintained support structures that ensure sustainability of the class goals?	3.9	5.1
4. Communication To what degree do you feel the group has enhanced inter-group and intra-group communication? <u>Communication</u> - Within a physical community, and between itself and outside, communication includes roads, electronic methods (<i>eg telephone, radio, TV, InterNet</i>), printed media (<i>newspapers, magazines, books</i>), networks, mutually understandable languages, literacy and the willingness and ability to communicate (<i>which implies tact, diplomacy, willingness to listen as well as to talk</i>) in general	2.5	5.5
5. Confidence How much confidence do you have in the group's ability to solve a task or problem if given one? <u>Confidence</u> - Although expressed as confidence in individuals, how much confidence is shared among the community as a whole?	3.3	5.2
6. Context How effective is the group environment in developing the groups' understanding of environmental issues? <u>Context</u> - (<i>political and administrative</i>). An environment that supports strengthening includes political (<i>including the values and attitudes of the national leaders, laws and legislation</i>) and administrative	3.3	5.1

(attitudes of civil servants and technicians, as well as Governmental regulations and procedures) elements, and the legal environment;_		
7. Information Analysis & Processing To what degree, does the group take in new information to analyze, criticize and evaluate it effectively? <u>Information</u> - The ability to process and analyze information, the level of awareness, knowledge and wisdom found among key individuals and within the group as a whole. This is when information is more effective and more useful, not just greater in volume or amount of information.	3.1	4.8
8. Intervention To what extent do you think the group is able to mobilize to take action, increase awareness or promote interest in environmental issues? <u>Intervention</u> - The extent and effectiveness of animation (<i>mobilizing, management training, awareness raising, stimulation</i>) aimed at strengthening the community? Do outside or internal sources of charity increase the level of dependency and weaken the community, or do they challenge the community to act and therefore become stronger? Is the intervention sustainable or does it depend upon decisions by outside donors which have different goals and agendas than the community itself?	2.6	4.0
9. Leadership How strong do you think the group is in enabling and facilitating the group's chosen direction of action? <u>Leadership</u> . Leaders have power, influence, and the ability to move the community. The most effective and sustainable leadership is one that follows the decisions and desires of the community as a whole, taking an enabling and facilitating role. Leaders must possess skills, willingness, honesty and some charisma!	3.1	5.1
10. Networking How much has the group's networking capacity tapped its resources for the betterment of the group's chosen work? <u>Networking</u> - Not just "what you know." but "who you know." The useful linkages, potential and realized, within the community and with others outside it._	3.3	5.1
11. Organization To what degree do you feel the group has developed individual's roles to support the group's mission? <u>Organization</u> . The degree to which different members of the classroom community see themselves as each having a role in supporting the whole (<i>in contrast to being a mere collection of separate individuals</i>), including organizational integrity, structure, procedures, decision making processes, effectiveness, division of labor and complementarity of roles and functions	2.3	4.9
12. Skills Rate the level of group's skill contribution to the project. <u>Skills</u> . The ability, manifested in individuals, that will contribute to the organization of the community and the ability of it to get things done that it wants to get done, technical skills, management skills, organizational skills, mobilization skills;	3.2	4.9
13. Trust What is the degree of trust you have of group members? <u>Trust</u> . The degree to which members of the "community" trust each other, especially their leaders and workers, which in turn is a	2.6	5.4

reflection of the degree of integrity (honesty, dependability, openness, transparency, trustworthiness) within the community;		
14. Unity How effectively has the group's sense of unity developed over the semester? <u>Unity</u> . A shared sense of belonging to a known entity (<i>i.e. the group composing the community</i>), although every community has divisions or schisms (<i>religious, class, status, income, age, gender, ethnicity, clans</i>), the degree to which community members are willing to tolerate the differences and variations among each other and are willing to cooperate and work together, a sense of a common purpose or vision, shared values	2.5	5.1
15. Wealth – Community Control of Resources What degree of wealth has the group developed within itself? <u>Wealth</u> . The degree to which the community as a whole (<i>in contrast to individuals within it</i>) has control over actual and potential resources, and the production and distribution of scarce and useful goods and services.	2.9	4.9
16. Political Power What is your perceived level of the group's political power at the end of this semester? <u>Political Power</u> . The degree to which the community can impact environmental change by national and district decision making.	2.33	4.3
Mean (p <.01)	3.0	4.9
Standard Deviation	0.6	0.4
*Adapted from P. Bartels (www.scn.org) (Likert 1-6 where 6 indicates highest agreement)		

Reference List

Bartle, Phil. 2005. Sixteen elements of community strength. Retrieved from <http://www.scn.org/cmp/modules/mea-16.htm> Oct. 21, 2005.

Stapp, W., Wals, A., and Stankorb, S. 1996. Environmental Education for Empowerment. Dubuque, IA: Kendall/Hunt. 156 pp.

SIUEnvironment <http://events.siue.edu/green>