

# For the Total Environment: Bill Stapp's Contribution to Environmental Education

Annette Gough

Deakin University

## Background

Obituary from *The Ann Arbor News* 23 May 2001<sup>1</sup>:  
Stapp, William B. Ann Arbor, MI



Age 71, Professor Emeritus of School of Natural Resources & Environment, passed away quietly on May 21, in the presence of his family. He is survived by his wife of 46 years, Gloria; sons, David and Richard; daughter, Deborah; daughters-in-law, Lauren Stapp and Linda Goldman; son-in-law, Terry Webster; grandchildren, Ryan Amundsen, Emma and Hannah Stapp, Charlotte Webster. Bill was born in Shaker Heights, OH, and raised in Ann Arbor, MI and Coronado, CA. He received his B.S., M.S. and Ph.D. from the University of Michigan. He taught at Cranbrook School for Boys, Audubon Camps of Maine and Dayton. He created the Outdoor program and was Conservation Coordinator with the Ann Arbor Public Schools before becoming a professor at University of Michigan where he taught until retirement in 1993. Considered the founder of environmental education, Bill helped plan the first Earth Day. His special interest was international environmental education and he was the first Chief of the Environmental Education Section, UNESCO. His environmental education program was the first to be unanimously accepted by all of the 135 member nations at UNESCO. During and subsequent to his two-year tenure in Paris, France he and Gloria visited and consulted with more

## A B S T R A C T

Bill Stapp passed away in May 2001, thirty one years after his first influential visit to Australia. Although many among the current generation of younger environmental educators might not know his name they are very likely to be working within a framework for environmental education that he worked hard to establish. This paper discusses his contribution from a socially critical standpoint and within the context of the relationship between formal education and informal settings that underpinned his work. In writing this paper I draw on his writings, commentaries on his work, personal knowledge and an in-depth interview I conducted with him in 1991.

than 120 countries on environmental education issues. Throughout his career he sought the root causes of environmental issues and helped educate students and adults to find solutions to issues affecting their communities. Concerned about world peace, he founded the Global Rivers Environmental Education Network (GREEN) in 1989. He was recently working on a UNEP sponsored GREEN rivers project between North and South Korea. He was recognized with numerous national and international awards and nominated for the Nobel Peace prize in 1993.

## Introduction

In order to understand Bill Stapp's passion for environmental education and his emphasis on the total environment, and how he moved readily between formal education and informal settings, it is important to understand where he came from<sup>2</sup>.

William (Bill) Stapp completed a degree in biology at the University of Michigan and emerged as a certified biology teacher at the secondary level; secondary teaching consequently became his first job. He served in the Marine Corps during the Korean war years, mainly in Japan which perhaps stimulated his international interests. When he got out of the Marines he went back to teaching but 'spent almost every weekend bird banding' (Stapp, 1991)<sup>3</sup>. He left teaching and went back to the University of Michigan to study for a masters degree in biology and a teaching certificate, following which he worked as a naturalist with the National Audubon Society. With the assistance of the GI Bill he returned to the University of Michigan to obtain a doctorate in conservation. There he met Stanley Cain, from whom he developed an interest in conservation education and for who taught him that 'if you're going to look at the environment you must look at it not only ecologically but economically, politically, socially and technologically' (Stapp 1991).

This concept of 'total environment' is reflected in the first guiding principle of environmental education in *The Belgrade Charter*, which was developed at a workshop convened during Bill Stapp's term as Chief of the Environmental Education Section at UNESCO. This principle states that 'Environmental education should consider the environment in its totality – natural and man-made [sic], ecological, political, economic, technological, social, legislative, cultural and aesthetic' (as quoted in Greenall & Womersley 1977, pp. 81-82). Almost

the same wording appeared in Recommendation No.2 from the 1977 UNESCO-UNEP (Tbilisi) *Intergovernmental Conference on Environmental Education*: 'Environmental education should consider the environment in its totality – natural and built, technological and social (economic, political, technological, cultural-historical, moral, aesthetic' (UNESCO 1978, p. 27). The main differences were that 'man-made' had become 'built', 'ecological' and 'legislative' had disappeared, 'moral' had been added, and 'technological' was repeated. The Belgrade wording seems more comprehensive and the absence of the bracket and repetition give it greater clarity. At the time of the Tbilisi conference Stapp had completed his term at UNESCO and was just a member of the United States delegation, and so was no longer in a position of significant influence with respect to the wording of recommendations. However, his belief in considering the environment in its totality underpinned his work for the rest of his life.

After completing his doctorate, Stapp began to consider strategies for achieving what were to become his goals for environmental education. Rather than solely focusing on teachers, he saw it as important to work at a structural level in formal education and in informal settings:

Perhaps one of the most important ways to change society is by working with the policy makers, who can go about as far as the public will allow them to go. Thus it was really important to develop strong educational programs that would be designed for the general public, the policy makers, people who make major decisions on the environment and the environmental managers (Stapp 1991).

In the early 1960s he began working as a conservation consultant with the Ann Arbor Public School System, developing a conservation education program that would integrate science, humanities and social studies from kindergarten to grade twelve. He continued to work with this program until 1964, when he joined the School of Natural Resources at the University of Michigan. He remained there until he retired in 1993.

### Formulating environmental education

Around 1968 Stapp, who was then president of the American Nature Studies Society, discussed with some of his students the limits of conservation education (that it was pretty much descriptive) and of outdoor education (that it mainly dealt with ways to use the outdoors to enrich the school program). They agreed that there was a need for a new area of study that considered the total environment, had a problem-solving orientation and addressed what citizens could do to resolve environmental problems. They called this area of study 'environmental education' and wrote a definition and preamble statement that was published in the first issue of the *Journal of Environmental Education*: 'Environmental education is aimed at producing a citizenry that is *knowledgeable* concerning the biophysical environment and its associated problems, aware of *how* to help solve these problems and

*motivated* to work toward their solution' (Stapp *et al.* 1969, pp. 30-1, emphasis in the original).

The essentials of this definition can be traced through numerous subsequent iterations of descriptions of environmental education in many countries over the past three decades. It is interesting to note that it was developed outside of the context of formal education (within a university School of Natural Resources and Environment) yet it has been regarded as relevant in both formal and informal settings. Its origins in the work of scientists is also evident in the term 'biophysical environment', but the absence of other aspects of the 'total' environment from the definition is also noteworthy given Stapp's emphasis on this aspect elsewhere. The problem solving emphasis of the definition is also an orientation that Stapp continued to promote throughout his work in environmental education.

### Stapp in Australia

Bill Stapp came to Australia in April 1970 as a major speaker at the Australian Academy of Science conference on 'Education and the Environmental Crisis' (see Evans & Boyden 1970). This conference was the first formal recognition of environmental education in Australia (Gough 1997, p. 5), and Stapp's presentation helped to provide both a political and an educational impetus for the development of environmental education in Australia during the early 1970s. He presented a strategy for curriculum development in environmental education based on his work at the University of Michigan and with the Ann Arbor Public School System, and on a comprehensive literature review (Stapp 1970a). His strategy focussed on developing a comprehensive (K-12) environmental education program that would span the curriculum in a school system. It aimed at 'helping our youth to be more knowledgeable concerning the environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution' (1970a, p. 36). It had nine phases (see Figure 1), starting with identifying the need for developing the program (which is exactly where the Curriculum Development Centre started in November 1974, see Greenall and Womersley 1977, pp. 25-30). The phases are consistent with the then dominant behavioural objectives model of curriculum development and dissemination exemplified by Ralph Tyler (1949, see Pinar *et al.* 1995, chapter 3).

An interesting aspect of Stapp's strategy for its time was that the committee to be established in Phase II was seen as involving teachers, school administrators, community citizens and students: 'One reason many well-conceived programs have failed is because teachers and students were not involved in program development' (Stapp 1970a, p. 26). A task of the committee would be to identify physical and human resources in the community to support the program. Both of these aspects indicate Stapp's understanding of the importance of more than just formal curriculum delivery for environmental education to achieve its goals: the broader community and student involvement are significant.

**Figure 1: Stapp's strategy for developing an environmental education program (Stapp 1970a, p. 24)**

A School system (K-12) that is interested in developing an <i>environmental education program</i> might consider the following strategy:	
Phase I:	Identify the <i>need</i> for the program
Phase II:	Establish an environmental education <i>committee</i> to develop and implement the program and to facilitate communication
Phase III:	Establish the <i>goal</i> and <i>sub-goals</i> of the program
Phase IV:	Establish the <i>objectives</i> (in terms of behavioral predispositions) of the program
Phase V:	Review the literature regarding <i>theories of learning and instruction</i> that apply to the formulation and implementation of the program
Phase VI:	Establish the <i>curriculum organization</i> of the program
Phase VII:	Establish the <i>curriculum</i> of the program
Phase VIII:	Establish a comprehensive in-service <i>teacher education</i> program
Phase IX:	Develop instruments to <i>evaluate</i> the effectiveness of the program

In the review of the literature regarding appropriate theories of learning and instruction (Phase V) Stapp (1970a, pp. 29-30) concluded that environmental education programs should be student centred rather than teacher directed, where youths are actively engaged in projects which are meaningful to them and of immediate relevance. He also believed that acquisition of technical knowledge might not necessarily lead to an increase in commitment to positive social goals (which was quite different from most educationalists of the time who believed that knowledge acquisition was a prerequisite for attitude change to occur). His belief led him to propose *environmental encounters* as the core of the curriculum of an environmental education program (Phase VII, Stapp 1970a, pp. 31-32, see also Stapp 1970b). As indicated by his willingness to engage the educational literature on theories of learning, whenever he encountered new ideas, such as action research, he was receptive to considering their relevance for environmental education.

To support students and teachers interested in implementing his environmental education model, especially the notion of environmental encounters, Bill Stapp and Dorothy Cox (1981) prepared a manual of environmental education activities. This manual was the basis for the Warrandyte South Primary School's (Victoria) whole school environmental education program (Warrandyte South Primary School 1985).

Bill Stapp, with his wife Gloria, returned to Australia in 1982 for a seven month national tour as a Senior Fulbright Scholar, sponsored by the Australian-American Educational Foundation. He presented a keynote address at the second national conference of the Australian Association for Environmental Education, and at the end of their visit Bill and Gloria Stapp prepared a summary report for the Australian Association for Environmental Education (Stapp & Stapp 1983). The focus of his talks was environmental encounters, 'where students become more process oriented when studying a problem and take action when solving it, not just talking and thinking, so that got me thinking about action' (Stapp

1991). While in Australia he learned of the area of action research which he 'felt would enhance and advance the environmental education movement' (Stapp 1991).

### Stapp and action research

Action research was developed by Kurt Lewin and first used in social settings such as factories and housing projects. Later Lewin worked with Steven Corey and extended the approach to education and worked with teachers in implementing action research in schools. Action research is 'a methodology which addresses problems in society by linking theories of change with practical action...[and] is designed to promote critical thinking at every stage of the process' (Bull *et al.* 1988, p. 38). This can be seen as another example of Stapp taking something from informal settings and applying it in formal education. Although Lewin and Corey had already done this in a general way, Stapp specifically brought their work into environmental education, with some encouragement from Ian Robottom of Deakin University, who believed that 'the methodology of action research would complement the goals and objectives of environmental education' (Stapp 1991). After further investigation, Stapp 'learned a lot towards the action research methodologies and research design, but it seems that you could mix in a little bit of the quantitative; it need not necessarily be either/or' (Stapp 1991). Later he began to realise that people in the School of Education at Michigan were using phenomenology and arguing that if you 'start with pre tests and post tests that you're still directing your thoughts to these pre test areas ... so I began to see more and more ... that maybe it is difficult to meld the two together' (Stapp 1991).

Some of the action research projects in Ann Arbor and Detroit schools resulting from Stapp's work are reported in Bull *et al.* (1988). These case studies demonstrate a range of different approaches to the Action Research: Community Problem Solving process developed by Stapp and his colleagues. The theorising of action research by Bull *et al.* (1988) is consistent with others' views of action research, particularly practical

action research (see McTaggart 1991). Although some of the case studies exhibit aspects of the action research spiral, generally they are closer to what Greenall Gough and Robottom (1993) call a socially critical curriculum, or what Noel Gough (1992) calls the social inquiry model of curriculum development for environmental education. Both of these approaches are grounded in a socially critical perspective and share much in common with action research, except that they lack the spiral which is probably the most difficult aspect to enact in a classroom.

This action research work was not without controversy. For example, after his return from his 1982 visit to Australia Stapp worked with his colleagues on developing, implementing and evaluating an environmental education curriculum module (Stapp *et al.* 1983). Although they used pre test/post test protocols and collected quantitative data, this research still proved to be controversial and stimulated a critique by Tom Tanner who argued that the action phase projects described by Stapp and his colleagues were not environmental education and that 'the study contained procedural errors which render much of it invalid' (Tanner 1984, p. 39). Stapp and Cox (1984) responded to his criticisms and that seemed to be the end of that. However, when his University of Michigan colleagues Martha Monroe and Steve Kaplan (1988) published their research findings on environmental problem solving in the classroom using action research methodology as described in Bull *et al.* (1988), they were criticised by Tom Marcinkowski (1988/89) who questioned the validity of their study, its limitations, and the comparability of their results. Monroe and Kaplan (1989) responded to these criticisms, and again the issue seemed to dissipate, but aspects of this 'paradigm war' in environmental education continued to be debated within the North American Association for Environmental Education (see Mrazek 1993).

Stapp's view is that some educational researchers 'may be a little paranoid in their kind of approach and very defensive' (Stapp 1991). With hindsight Stapp believed that he would use a qualitative methodology and that 'if we had asked the students to collect information in some other ways it would have been of more value' (Stapp 1991), but that it probably would have opened them up to more criticism:

I think what we're really about in education is being very free and very open and able to explore different research methodologies. I think that more of the quantitative aspects have been what people are trained to do and therefore are very defensive and not really open to other forms of research (Stapp 1991).

## GREEN

Starting in 1983 with one high school biology class that was interested in fecal coliform contamination in the wind surfing area of Lake Michigan, and who took action in the community on this issue<sup>4</sup>, by 1987 Stapp had sixteen schools involved in water quality testing and sharing results through a computer conference and a student congress. Out of this work grew

what is now known as GREEN, the Global Rivers Environmental Education Network. Launched in 1989 as a freestanding non-profit organisation, GREEN is now established in well over one hundred countries, including Australia, and was the focus for Bill Stapp's visits to Australia in 1991 and 1992. On these occasions he worked with the Sydney Water Board to establish Streamwatch (which then grew into the Australia-wide Waterwatch community and school water quality monitoring program) as well as helping to establish GREEN in Australia.

GREEN is a continuation of the model of curriculum development for environmental education Stapp outlined at the 1970 Australian Academy of Science conference (Stapp 1970a). Its focus is to provide young people with educational opportunities to understand, improve and sustain the water resources in their communities. GREEN empowers young people to learn more about water quality within their watershed and use their findings to create lasting solutions' (from the GREEN website). GREEN undoubtedly provides educational opportunities, but the statement that 'GREEN empowers young people' is questionable, particularly for feminists. For example, Elizabeth Ellsworth (1989) examines the discourses of critical pedagogues, the concepts of empowerment, student voice and dialogue, and the term 'critical'. She then problematises them by asking 'which interpretations and 'sense making' do these discourses facilitate, which do they silence and marginalize, and what interests do they appear to serve?' (1989, p. 298). Lather (1992, p. 122) makes similar claims: 'too often, (critical) pedagogies have failed to probe the degree to which 'empowerment' becomes something done 'by' liberated pedagogies 'to' or 'for' the as-yet-unliberated, the 'Other', the object upon which is directed the 'emancipatory' actions' and then frames a key question: 'How do our very efforts to liberate perpetuate the relations of dominance?' I do not intend this digression to detract from Stapp's contribution to environmental education, because 'empower' is not a word I associate with his work. Rather, his focus was on teaching students critical thinking, problem solving, teamwork and decision making skills. Once GREEN became an organisation in its own right Stapp's influence would have diminished and perhaps others unaware of the difficulties associated with the word 'empower' have authored the text on the website. The important aspect here is that the focus of GREEN is formal educational opportunities in informal settings – students engaged in developing academic skills while meaningfully engaged in projects and environmental problems whose resolution will help the students' own communities.

For Bill Stapp GREEN was yet another stage in his own personal development: 'I try to be a very open person, trying to seek the truth and trying to look at new thoughts and new ideas as they begin to come along ... I try to be open, to explore those new ideas, see how those new ideas fit into your *modus operandi*' (Stapp 1991). Even after his retirement from the University of Michigan Stapp continued consultancy work on GREEN related projects around the world.

Stapp's approach to environmental education was quite different from that adopted by many of his peers. For example, Bob Roth, another significant figure in the early days of environmental education in the United States<sup>5</sup>, compared his work with Bill Stapp's as follows (interview transcript, 3 October 1991):

In his project GREEN I think he is really doing a marvellous job, but I've always chosen to work through a government structure to accomplish things. He's chosen to impact the user directly, the teacher that's working directly with the children and then build backwards into institutional structures. That kind of give and take exists but I think we're a lot alike but we chose to approach EE differently. The University of Michigan has always been known for an advocacy orientation. I usually try to stay within a system to accomplish things and work from inside. I'm not all that comfortable with controversy and that's probably why I choose to work within existing institutions.

Roth's comment on Michigan's 'advocacy orientation' is consistent with Stapp's interest in action research and informal settings as part of environmental education in formal education.

## Conclusion

Although no longer with us in person, Bill Stapp's influence on the field of environmental education in Australia is enduring. His impact has been both direct and indirect. His 1969 definition, and its further development during his time with the UNESCO-UNEP International Environmental Education Program (IEEP), is still being used as a reference point, although generally not attributed to him. His contribution to our first conference on environmental education (Evans & Boyden 1970) helped frame the direction for the development of environmental education in Australia in the 1970s. His curriculum development and instructional model for environmental education (see, for example Stapp 1970a, 1970b, 1978), although initially influential, is now overlooked in the Australian context, as is his activities manual (Stapp & Cox 1981). However his more recent project, GREEN, which draws upon this model, continues to operate in Australia and many other countries.

Another aspect of Stapp's influence is that during the first decade of environmental education in Australia there were frequent debates about what 'environmental education' actually was. It was only after the goals, objectives and guiding principles for environmental education recommended and endorsed at the 1977 UNESCO-UNEP intergovernmental conference on environmental education (held at Tbilisi USSR) became widely known that some consensus developed. The goal statement from Tbilisi (UNESCO 1978, p. 26) has many affinities with the definition prepared by Stapp *et al.* (1969). The Tbilisi goal statement and the accompanying objectives and guiding principles have been incorporated into national and state level policies on environmental education in

Australia, together with conceptualisations arising from Arthur Lucas' (1979) categorisation of definitions of environmental education as being education *in*, *about* and *for* the environment (see Greenall Gough 1993).

However, in many ways it was his emphasis on the need to consider the total environment in environmental education programs – looking at it not only ecologically but economically, politically, socially and technologically – that has been most influential, and for some the hardest to come to terms with. Looking at the total environment involves an approach different from the acquisition 'of fragments of facts, concepts and simple generalisations organised loosely within discrete bodies or fields of study' where 'student thinking is confined to applying factual information to familiar "well-structured" problems' (Stevenson 1987, p. 75). Such different approach is very difficult to enact in the traditional school curriculum. Indeed traditional curriculum and pedagogical approaches have been one of the greatest barriers to the successful implementation of environmental education in schools (Gough 1997). But Stapp was passionate about this emphasis, and we should be too. It's one of his legacies and we should honour his memory by continuing to emphasise the total environment – and not be distracted by only partial studies as is so easy to do. ☺

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## Notes

- <sup>1</sup> See [http://www.snre.umich.edu/SNRE-News/Bill\\_Stapp/obituary\\_annarbornews.html](http://www.snre.umich.edu/SNRE-News/Bill_Stapp/obituary_annarbornews.html) (accessed 1 March 2002)
- <sup>2</sup> Parts of the following text have been adapted from Greenall Gough (1993, pp. 30-33)
- <sup>3</sup> All quotations attributed to Stapp (1991) are taken from the transcripts of interviews I conducted with Bill Stapp in Ann Arbor, MI on 1 and 2 October 1991.
- <sup>4</sup> See an interesting parallel in Greenall Gough and Robottom 1993.
- <sup>5</sup> See, for example, Roth 1970, 1972, 1973, 1979 and the Roth case study in Greenall Gough 1993.

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