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Challenges in Environmental Education: A Conversation with Annette Gough

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The conversation between Professor Annette Gough and Fatih Taşar took place in her office at RMIT University, on May 26, 2008. The purpose of this conversation was to highlight development of Professor Gough's career in environmental education and her research in the field. We talked about the history and development of environmental education and whether it is a separate field or accepted as such. She explained why she thinks environmental education is important, what the future awaits in terms of environmental education research, and Australia's position in such matters. We lastly focused on her achievements so far and her research interests. This manuscript includes the transcription of our conversation and also references of the works that were mentioned together with Professor Gough's selected scholarly works.

Keywords: Environmental Education, Gender Equity, Feminist Poststructuralist Analysis, Curriculum

INTRODUCTION

Professor Annette Gough is an editor of this journal since 2007. She has an immense experience in the field of environmental education as the reader may see throughout this paper. As an Endeavour Executive Award Holder I spent four months in Melbourne and was hosted by RMIT's School of Education. Endeavour Awards are given to high achieving individuals from education, government, business, or industry to provide professional development opportunities in Australia and abroad. The focus is on building skills and knowledge through a host work environment. I intended to observe school environments and curricula, teacher education, teacher professional development and related issues in Melbourne and elsewhere in Victoria. My other goal was to establish strong links with the Australian colleagues in order to continue a mutually beneficial partnership in the future.

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This opportunity also gave me a unique firsthand experience to observe the Turkish immigrants' status in education and social life in Melbourne. It was also remarkable to note the 40th anniversary of the arrival of first Turkish immigrants to the city in 2008. While in Melbourne professor Gough and I also planned a half day seminar named "Looking to the future of MSTE Education" which was held on 16 June 2008 with participation of several colleagues to discuss issues related to mathematics, science, technology, and environmental education at RMIT's School of Education at the Bundoora West Campus. Hence the seeds of this special issue were planted. It is very meaningful to have this conversation published together with the other two in the Australia Special Issue of the EURASIA Journal.

PROFESSOR GOUGH'S VITA

Annette Gough is Professor of Education and Head of the School of Education at RMIT University. Prior to this she was Associate Professor of Science and Environmental Education at Deakin University. She is also an adjunct professor at the University of Victoria, British Columbia, Canada and a visiting professor at Rhodes University in Grahamstown, South Africa.

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Figure 1. Professor Annette Gough in her office at RMIT University as the Head of School of Education.

Annette has been involved in environmental education for most of her professional life. Initially trained as a biology and science teacher at the University of Melbourne, Annette taught biology, geography and science in Victorian secondary schools before joining the Commonwealth Government's Curriculum Development Centre (CDC). Here she conducted Australia's first national needs for environmental education survey in 1974 and then coordinated the CDC's national environmental education projects implemented between 1978 and 1981, including Australia's first nationally agreed statement on environmental education for schools in 1980 (Environmental Education for Schools or how to catch environmental education). She was then Director of Environmental Education in the Commonwealth environment department (under numerous titles) before moving to Deakin University in 1990.

Annette completed her Master of Education at the University of Melbourne in 1980 and her Doctor of Philosophy at Deakin University in 1994. Her theses in both instances were concerned with deconstructing the history of environmental education in Australia and internationally since 1970. Her Master's thesis was published by the Curriculum Development Centre in 1981 (Environmental Education in Australia: Phenomenon of the Seventies) and her doctoral dissertation formed the basis of the Australian Education Review published by the Australian Council for Educational Research in 1997 entitled Education and the Environment: Policy, Trends and the Problems of Marginalisation.

Annette was the third president of the Australian Association for Environmental Education (1984-1986), and was made a life fellow of the Association for her contribution to the field in 1992. Her contributions to environmental education in Victoria were recognised in 2000 by the Victorian Association of Environmental Education when she was awarded Environmental Educator of the Year and made a life fellow. She was also the first female President of the Gould League of Victoria (2000-2002) and chair of the American Educational Research Association's Special Interest Group on Ecological and Environmental Education (1996-97) where she continues to be a member of the executive committee.

Since the mid 1990s Annette has been a member of both examination and accreditation panels for the Victorian Certificate of Education subjects Outdoor and Environmental Studies and Environmental Science (and their predecessor subjects) for the Victorian Curriculum and Assessment Authority. She has also been a judge for the Eureka Prize for Environmental Education and is currently a member of the editorial board of eight international journals related to environmental education, science education and international understanding.

In addition to the publications previously mentioned, and a large number of journal articles and book chapters, Annette's books include Environmental Education Teachers' Handbook (Longman Cheshire,

1978), Taking to the Streets and Pollution in Focus (Educational Media Australia, 1982 and 1983 respectively), Founders in Environmental Education (Deakin University Press, 1993), and co-authoring Outdoor and Environmental Studies: VCE Units 1 to 4 (Thomson, 2002 and 2005) and Educating for a Sustainable Future: A National Statement on Environmental Education for Schools (with Brian Sharpley, Curriculum Corporation, 2005) and Development of Environmental Education in Australia - Key Issues (1977, Curriculum Development Centre).

THE DIALOGUE

FT: Good morning Professor Annette Gough (AG). Today is May 26, 2008 and we are in your office in Melbourne at RMIT University, and I am very glad to have this interview for the Eurasia Journal.

I would like to begin with this question - how did you begin researching at RMIT Education and what kind of a background did you come from?

AG: Good morning Fatih (FT) and thank you very much for inviting me for this interview. I am very honoured by the opportunity.

I started my career as a high school biology and science teacher. My first degree was a Bachelor of Science (Education) from the University of Melbourne, but I was also a frustrated historian. The way our education system was structured in Victoria, when you get to the last 2 years of high school, you had to choose a pathway. One was the humanities pathway and the other was a science pathway, and you couldn't mix the two if you actually wanted to pursue a science career. So, although I was very interested in science, I also loved history and so it was with great reluctance that I stopped studying history at school and pursued a biology career. I was fortunate to be able to do history and philosophy of science as one of the subjects in my Bachelor of Science (Education) studies. I became so passionate about that, that when I finished my undergraduate course I started a Master of Science in History and Philosophy of Science.

FT: I was interested in History and Philosophy of Science when I was doing my PhD as well. It is a very interesting topic.

AG: It is. It is really quite fascinating. I got to the stage where I did all the coursework and was up to writing the thesis and at that point I changed careers from being a classroom teacher to working with the Australian Science Education Project. I realised that if I was going to do a Masters degree then I was probably better off doing a Masters degree in education rather than a Masters in science because my career was heading that way, and so I switched to the Master of Education. Perhaps when I have time I will go back to studying history and philosophy in science.

I also have continued my interest in history through my Masters and PhD. My Masters (1981) was a history of the first ten years of environmental education in Australia. called, "Environmental Education in Australia – Phenomenon of the Seventies", which of course it wasn't because 30 years on we're still talking about environmental education! My PhD (1995) then looked at environmental education from the 1960s through to the early 1990s so again it was a historical study. My master's was an interpretive into critical case study, what was happening nationally with and around the Curriculum Development Centre, which is where I was working at the time. My PhD was very much a critical into poststructural study in terms of it being a feminist poststructuralist analysis of the foundations of the field. So I've been involved with a range of different types of educational research methodologies and with environmental education for many years, but also I've managed to keep an historical perspective and interest in the environment and science in there at the same time.

You did ask me the question of how did I begin researching in the field. It really started when I switched to working for the Australian Science Education Project which was part of the National Curriculum Development Centre. At that time the Curriculum Development Centre was in its early days and the government had given it five priority areas, one of which was environmental education. So I was sent off around Australia in late 1974 to do the first National Needs for Environmental Education Survey in Australia, which formed the basis for the related programs of the Curriculum Development Centre during the 1970s, so my history in the field goes back a long way.

FT: Just out of curiosity, and I'm not familiar with the works and do not know if they exist at all, is there any work related to history and philosophy of the environmental movement or perhaps related works to environmental education?

AG: There's a lot of work around the history of the environmental movement. Here in Australia, Drew Hutton has written a couple of books (e.g. Hutton & Connors, 1999) and Libby Robbins has done some work (e.g. Griffith& Robbins, 1997) and so on, so there's been quite a bit of work around the history of the environmental movement in Australia. Internationally Peter Hay (e.g. Hay, 2002) has done some work in that area.

FT: So it does exist in the field?

AG: It does exist in the field. In terms of the history of the environmental education field, I've probably been one of the more prolific writers. It has sort of fallen to me over the years to write about it. I've done a book on the Founders in Environmental Education that actually came out of my doctoral studies but was published

separately by Deakin University (1993) and many journal articles.

FT: My next question is, when you consider the history of environmental education and the environmental movement, what marked the beginning of environmental consciousness, and the beginning of environmental education in the world as a separate area?

AG: The cliché around what marked the beginning of environmental consciousness, most people put it down as Rachel Carson and Silent Spring, Garrett Hardin and the Tragedy of the Commons and Paul Ehrlich's book on the Population Bomb and so on. They were all scientists in the 1960s who were concerned about the state of the environment: increasing levels of pollution - air pollution, water pollution; destruction of forests and wetlands. Of course Rachel Carson was looking at the effect of the use of DDT on the environment and its accumulation through food chains, all those sorts of topics. In 1970 in the US and soon after in Australia we had the Clean Air and Clean Water Acts and the US Environmental Education Act was 1970 as well.

Environmental education as a movement started around the same time because with most social issues education is seen as the required response to something. If we've got some motor vehicle accidents, we need driver education in schools. If we've got lots of people going bankrupt, we need finance education in schools. In the case of environmental education we had things going wrong with the environment so we need environmental education in schools. The first use of the term that I've been able to track was to 1965 at a conference in England but very soon after it became very widely known in the US as well and Bill Stapp and a group of colleagues at the University of Michigan, came up with one of the early definitions of environmental education.

FT: Is the definition now, different to the definition then?

AG: Not really. If you go back to Stapp et al's original objectives for environmental education (1969), and you do have to accept that the language was very sexist at that time because they were scientists and they tended to use 'man' as the universal, which as a feminist researcher I would very much resent. So I tend to translate 'man' to 'human' in these. His four objectives were that:

• we have a clear understanding that humans are an inseparable part of the system, consisting of humans, culture and the bio-physical environment and, that humans have the ability to alter the inter-relationships of this system.

• Secondly, a broad understanding that the bio-physical environment, both natural man-made in its role in contemporary society.

• Thirdly, a fundamental understanding that bio-physical environmental problems confronting humans and how these problems can be solved, and the responsibility of citizens and government towards their solution.

• Fourthly, attitudes of concern for the quality of the bio-physical environment which will motivate citizens to participate in bio-physical environmental problem-solving.

The heritage of those is still very much with us today, that people talk about environmental education being about behaviour change, that people need to act differently for the environment but also that depth of understanding that we need of ecological concepts but also economic, social, political, that there's not simple solutions. I think that the heritage of what we say now is environmental education is very much in that set of objectives.

FT: I see that there is also reference to biology. It reminds me that many people, if not most, tend to think that, for example, that technology is a subfield of physics and likewise I see many people tend to think that environmental education is a subfield of biology or biology education. What's your position? What's your take in this debate sort of? Is it really a part of or subfield of biology or has it grown to be a different, stand-alone field?

AG: I don't think it has grown to be; I think it has always been a different, stand-alone field. There's really been a love-hate relationship between environmental education and science education over the years. Although the roots of environmental education are very much in the calls by scientists that we need to do something about our behaviour towards the environment and what human activity and technology was doing to the environment, the social side of environmental problems, and environmental problems are social problems because they are to do with people and people's survival and so on.

FT: Do you think that science and technology are social acts as well?

AG: Yes, but traditionally science teachers want 'nothing but the facts, ma'am' and can't cope with looking at the actual impact of activities or the social side of things. They're very happy to study ecosystems and they might look at changes in ecosystems but they're not willing to move into that problem-solving stage with students. Scientists in real life might move into those sorts of situations but science teachers wouldn't, so within a schools context, environmental education and science education grew very rapidly to be different animals and you'll have people like Arthur Lucas (1979) writing about the problems of science education and why science education shouldn't get too involved with environmental education. His paper, back in 1980, included discussions about science being a

limited vehicle for environmental education and these were very common discussions during the 1980s. I think we have moved to the point now where environmental education meets science education because environmental education does need that ecological understanding but that's just one aspect of it. But at the other end I think science education needs environmental education because there's such declining interests in science and science education in the western world that the one way that you can hook students' interests in science is through studying the environment.

FT: It can be a vehicle, you think?

AG: Oh, I think so. The environment is an enormous vehicle for engaging students' interests with science because environmental education is multi-disciplinary. You can take an environmental problem – you can study the ecological concepts that underpin it and you can also perhaps look at the chemistry that is involved, the physics that is involved, the geology that is involved but also the history, the geography, the mathematics, the artistic responses. You can sort of build all of that and students are responding much more to the environment than they are to the straight conventional sciences, so I think it's a huge area for bringing the two back closer together where they have been divorced for a while.

FT: When you consider the history of environmental education, how do you think the research agendas have changed over the years and what do you expect to see in the future? What emphasis will be given or should be given in the future?

AG: The environmental education research agenda has certainly moved. Nowadays the everyday concerns are with how successful the program's been in engaging students' interests in the environment and particularly the long term effects of the programs: how do we know that people are going to change their behaviours and continue to sustain that behaviour.

FT: What about in those days?

AG: If you go back to the 3 way approach to environment education that Arthur Lucas used as the basis of his thesis back in 1972 (see Lucas, 1979) - Education in the Environment, Education about the Environment and Education for the Environment - and it came to be part of the slogan that it's only when there's education for the environment is environmental education really happening, that education in the environment was already happening through biology and outdoor education and things like that. Education about the environment was happening through traditional schooling but there was very little education for the environment where you've got people engaged in values clarification, problem solving, all those sorts of things. So, it was looking at how you can educate people for the environment and whether there's sustaining of any changes that happened. That focus continues through to today. People still say "how do we know that program works?" and we've got public education programs around - saving water is a good example in Melbourne, where we are still in a drought.

FT: We are having that in Turkey as well.

AG: That's right. So you've got to make people very water conscious so that's part of environmental education because you're giving them the knowledge as to why they need to be making a change but you're trying to change their attitudes and their behaviour so they do save water, when they do have 3 minute showers rather than 10 minute showers.

FT: We also have some hazards in Turkey because of over-using of water in the croplands.

AG: Yes, and we've got issues around our irrigated areas too, so the focus in environmental education research, and again, because it came out of science, in lots of ways was a very psycho-statistical type of approach to educational research. It's gradually evolved into … you know, case studies are now very common in the environmental education research for the future.

FT: Does it compare with science education shifting from more quantitative to qualitative?

AG: Yes, very similar trends, I think gender as an issue in environmental education actually came later than in science education.

FT: That's surprising.

AG: Yes, it was back in the early 1980s that people were really looking at gender as an issue in science education, whereas it was really in the late 1980s and early 1990s before it crept into environmental education. But I think at the other level there's probably been more critical and poststructuralist research happening in environmental education than you'll see in science education. Just because, once you've made that leap into environmental problems or social problems that a lot of the research methods of the social sciences become much easier to use and much more acceptable in the field. So if you look at the program for the special interest group on ecological and environmental education at the annual meeting of the American Education and Research Association, you might see a rainbow of research methodologies in the papers related to environmental education. But basically the focus is still very much on changing attitudes, changing behaviours as being the focus of environmental education research.

FT: So what is remaining to be done in the future?

AG: Where do you start?

FT: A lot of things?

AG: A lot! It's still a small field compared with science education and there are still lots of strategies that have happened. I think there's increasing awareness of the needs of different societies. There's no 'one-size-fits-all' in environmental education that

what works for one social group isn't necessarily going to work with another social group.

FT: In one part of the world it doesn't necessarily …

AG: … translate to another part. No, no. And I think in some ways environmental education is ahead of science education in that way because I think science is still seeking for the one true story as Sandra Harding would say.

FT: So, if you continue in that line, what do you think environmental education researchers have achieved so far and what else is awaiting them in the future? What are they still achieving?

AG: I think one of the things that environmental education researchers have done is increase the profile of multi-disciplinary research in education.

FT: If I go back to my question before - Is it dominated by the environment people or is it still, I mean how you talk about being multi-disciplinary, is it really a multi-disciplinary program or dominated by one group?

AG: I think it is getting to be much more multi-disciplinary. Up until probably 10 years ago if you dug down you'd probably find a science educator at the root of someone who's in environmental education. Now I'm supervising doctoral theses of people coming out of the arts and drama, people who are coming out of geography, you know, people are coming out of different areas into environmental education research. It's not just people coming out of science education and sociologists are getting very involved in environmental education as well because of the social implications of environmental problems. I think one of the other contributions that environmental education research has made, has been to rekindle awareness of the importance of experiential education, For a long time, going back to John Dewey, when experiential education was very important, but then we seem to retreat to the classrooms and I think environmental education has shown the importance of connecting children with nature and giving opportunities for outdoor experiences, whether it's having farm animals in school grounds or having field trips to the local creek, just the whole importance of getting out of the classroom and in touch with the world.

FT: My next question is being far from the rest of the world, how integrated is Australia to the world in the field of science education?

AG: Very connected. I think Australians have played a significant role in science education developments. Most people in science education would know Peter Fensham's name. Peter is really internationally revered in the field and, of course, he's someone who's straddled the science/environmental education nexus too. He has spearheaded movements such as Science for All. He's still very involved with PISA. There are other examples as well, people like Barry Fraser and Ken Tobin have been President of NARST, a North American bastion. So Australia has a very small population, just over 20 million, but we seem to make a big splash in areas where we get engaged, whether it's the sporting field or academia and we've taken a lead in science education in various ways over the years and in environmental education too, I think.

FT: How are environmental problems in Australia similar or different from the other places on earth?

AG: Well, you've already talked about Australia being far from the rest of the world. It depends on how you define far, but the majority of the world's population sits not that far from Australia. We're surrounded by China, India and Indonesia but we do have a unique, natural environment because of a long geographic isolation from the rest of the world. The land bridges to Asia were covered by the sea quite a while ago and so we had some - I don't like very unique, but - unique flora and fauna with our monotremes and marsupials and so on, and insects that probably still haven't even been investigated. Going with that, we also have one of the world's highest rates of extinction of our native flora and fauna because imposed on that very ancient, natural environment, we've got a very rapidly advancing industrialised western civilisation which is just totally in conflict with the sort of land that we've got. A lot of damage has been done over the last 200 odd years through the introduction of cloved and hoofed animals. Sheep do enormous damage to our soils by breaking them up so we've got big erosion problems. We've got big cattle populations through the rural areas and the outback that have done all sorts of damage to our grasses, our shrubs as well as our soil. Then in our cities, and we're one of the world's most urbanised populations, I think something like 90% of our population lives in cities of more than 10,000 people, so it's an incredibly urbanised population down the eastern seaboard with the little pockets over in Western Australia around Perth. But because we are so urbanised, we have enormous air and water pollution problems too, and traffic problems and all those things that go together, so …

FT: Carbon emissions…

AG: Huge carbon emissions, huge smog problems on certain days, so we've got very similar problems but also we've got our own set of problems that go with our unique natural environment.

FT: At this point, when we shift from the problems of environment to the problems of environmental education, how do you see the difference or similarity with the rest of the world?

AG: Environmental education got off to a very early start in Australia. We had our first national conference on education and the environmental crisis in 1970 convened of course by the Australian Academy of Science because at that time it was the scientists that

were making the calls, but that early start by the scientists coincided with a change of government in 1972 that brought in our first Labor government in 23 years and that Labor government was very socially aware and the environment was very high on the agenda. Moss Cass was the first Minister for the Environment and as I mentioned earlier, the Curriculum Development Centre that was set up by the Labor government and was given environmental education as one of its priority areas in 1974. So when Peter Fensham represented the Australian government at the UNESCO-UNEP Belgrade workshop in 1975, that formulated the Belgrade Charter which is one of those icon documents of the field, he was able to come back and report that he felt Australia was really out there in terms of how fast we were developing environmental education (Fensham, 1976). When he went to the UNESCO-UNEP Tbilisi Conference two years later, we had had a change of government, back to a Liberal government, and he came back thinking that the rest of the world was fast catching up with us so it's interesting to see what effect a government can have on the advancement of a field. The environment was much higher on the Labor agenda in those days than on the Liberal agenda. But Australia has followed various events like the World Conservation Strategy in 1980 with, in 1983, our National Conservation Strategy which highlighted the importance of education. We had our first national statement on environmental education and in 1980 (Greenall for the Curriculum Development Centre) and our second one in 2005 (Gough & Sharpley for the Department of the Environment and Heritage)- but it's interesting it took 25 years for the second one to appear. So we've had an interesting history and I think sometimes we've been leading the world and sometimes we've been following the world but I think, in most cases, we've been keeping pace with the world. I think one of our problems at the moment is that the environmental education agenda is being pushed by the environment ministry not by the education ministry…

FT: So you have a different environment ministry?

AG: Yes, yes

FT: Federal government or?

AG: Federal government and State level. Education is a state responsibility, but environmental education seems to be mainly the responsibility of Sustainability Victoria at the state level. Nationally, environmental education has always been pushed by the environment ministry (Department of the Environment, Water, Hertiage and the Arts at present) whereas education is with employment education and work relations and environmental education has no profile there. At the moment you've got to keep remembering what the associations are but …

FT: In Turkey, it's the Minister of Environment and Forests.

AG: Ok, in Victoria, it's the Department of Sustainability and Environment and the State Department is Education and Early Childhood Development so they're very different agendas. So the United Nations Decade of Education for Sustainable Development agenda is being totally pushed through the environment agencies not the education agencies.

FT: Ok. How is the importance of environmental education recognised in Australia and elsewhere? You probably answered it already.

AG: Yes I have answered it to a certain extent. I think the most prominent event for environmental education is probably the US Environmental Education Act but that sort of gave a beacon for other people to follow - and not many others have unfortunately.

FT: I think the US has lost that interest.

AG: Oh hopeless, yes, totally, and in fact that Act only lasted five years and it's never really been particularly renewed.

FT: Their reluctance with the Kyoto Protocol?

AG: Yes, yes exactly and as Ronald Reagan's saying "if you've seen one tree, you've seen them all" didn't do much for the environment movement. At the moment we've got the Decade on Education for Sustainable Development which provides prominence at the international level but behind that there's very little happening if you go country by country. Certainly in Australia that would be probably less than 1,000 people would even know that we are in a Decade of Education for Sustainable Development (ESD).

FT: I didn't know either.

AG: No, so it would be interesting to have a look and see what the US and Turkey are doing. In Australia I mentioned that CDC was given environmental education as a brief in 1974. In 1975 we had an Australian National Commission for UNESCO seminar on Education in the Human Environment (Linke, 1977). In the late 1980s the Curriculum Development Centre had a range of projects in environmental education. In 1988 for our bi-centenary, environmental education was one of the themes that was promoted in schools there. In the early 1990s, in the early days of the previous National Curriculum, environmental education was to be a stabilised area but then it was included within the studies of society and environment which was a humanities social science type subject but included history, geography, economics and all sorts of multicultural education, global studies, aboriginal studies, legal studies and environmental education. So it was lumped into that and then, in 2005, as a part of the beginnings of the Decade, the government, through the Curriculum Corporation, released their national statement on environmental education for schools so that was the beginning of what we were hoping was going to be a new movement for environmental education from the federal level, but there was nothing

to follow it at all and now we've had another change of government. It's sort of hard to know where environmental education is sitting at the moment. I think that is probably the same, it's hard to generalise to the rest of the world and the countries I'm most familiar with are the US and England and Canada and I think we've got lots of similarities with those. I think we're a lot stronger than Canada and the US. England has had a lot of activity around education for sustainability but I'm not sure that much of it is filtered down. There's lots of documents on websites and there's been lots of meetings but if you look at the penetration into the schools, there seems to be very little at all.

FT: What have you achieved personally in the field and what else do you expect to do in the future because I know you have moved to a more administrative position right now, you are the Head of the School of Education at RMIT, but I also know that you are still active in your research and publishing and attending conferences and that sort of thing? So being still active, what are you still interested in and what do you expect to do in the future?

AG: In terms of achievement, yes you're right, it has been a life long career for me, dating back to 1974 which was only my second year out of undergraduate studies at university, so it is a long time. I'm sort of unofficially recognised as probably the "mother" of the field in environmental education in Australia which is sort of nice, and I've got a lifetime fellow award from the Australian Association for Environmental Education from 1992 that recognises that contribution. I was the first female president of the Gould League in its 90 year history, and I think I'm still the only female president, so that was a nice honour and I've certainly pioneered for feminist research in environmental education and been a strong advocate of socially critical environmental education work and I've written both national statements for environmental education - on my own in 1980 and with my colleague, Brian Sharpley, in 2005. It is quite a long period of involvement. For the future I think I would like to continue to push for environmental education as part of the education agenda rather than the environment agenda. Good environmental education is really just good education. If we encourage our children and students in schools and in universities to be good critical thinkers, to be concerned with problem-solving, to think about their actions then we're really just educating good citizens. So I think that's where I would like to continue working. I'm still involved in Australian Research Council grant projects in the area too.

FT: When it comes to environmental education, it is not the citizens of a specific country but the citizens of the world. You should rather regard it that way.

AG: Yes, that's right, in fact a project that I'm involved in at the moment is an Australian Research Council funded project on global connections which is focused on connecting students in schools in Melbourne with students in schools in Indonesia to try and develop some international understanding that has an environmental component to it. I would certainly like to do more work in that area. I've had fantastic experiences working in South Africa on an AusAID research project for capacity building in environmental education and I'd certainly like to continue working in that area too. But it is hard to find the hours in the week when I'm a full-time administrator as well.

FT: My last question will be – what suggestions do you have for future researchers?

AG: There's a huge amount of resistance to environmental education within the formal education area because it's seen as just another thing to be fitted into the curriculum rather than them seeing it, as I wrote back in 1980 – an orientation in the curriculum. I mean I think everything can feed into environmental education. It can be an umbrella, it doesn't have to be another hour or two hours a week to be fitted into the curriculum. It's more a world view, a way of approaching the world that needs to infiltrate everything that we do in the curriculum. At the moment we have such a capitalist market driven philosophy that underpins everything that we do and we don't even consciously engage with it and I think we have to engage with that and replace it with a more ecologically friendly way of approaching the world and that's the revolution I would like to see.

FT: So, as I understand, you don't want to see environmental education under a different umbrella but you would like to see environmental education as an umbrella for a lot of fields.

AG: Yes, yes, as a way of life.

FT: Ok, all right. Thank you very much for this conversation.

AG: Thank you

FT: I hope this will be useful for the other colleagues around the world and thank you very much.

AG: I look forward to maintaining contact.

FT: Thank you

AG: Bye

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