From Waters Edge To Red Centre Conference
Second National Water Education Conference

It's all about behaviour!

Abstract

If you ask most people who are delivering education programs aimed at improving water quality and/or reducing water consumption, they'll tell you that their program is aimed at getting people to change their behaviour.

But what does it take to achieve behaviour change? How do we use education to achieve the desired behaviour in most of the people most of the time, or even some people a little of the time? What do we understand about behaviour and the motivators for change?

This paper will help to answer the crucial questions that all of us ask about how our water education program might make a difference. It will critically review some of the major global models for change including The United Nation's Ottawa Charter for Health Promotion, and some of the academic models including those developed by: Pochaska, [*The Stages of Change model*]; Rosenstock [*The Health Belief Model*]; MacKenzie Mohr [*Community-Based Social Marketing*]; and Bandura [*Social Cognitive Theory*].

In doing so however, the paper will provide practical suggestions for water education progam planners and deliverers about how to impact on people's behaviour. It will consider the use of education in the context of other behaviour change oriented approaches, including regulation, water restrictions, provision of infrastructure and water pricing policies.

As a starting position this paper will take the view that if giving people information is not enough to motivate behaviour, then what will make a difference. Education practitioners will have a chance through this presentation to explore the truths and the myths associated with human behaviour and how it might be influenced.

Key words: behaviour, sustainable, behaviour change, water education

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It's all about behaviour

Introduction

It is late in 2005 and I sit in a hotel room in Hanoi, Viet Nam drafting the initial bones of this paper. In a few hours I begin trialing an education program for the World Health Organization [WHO] - a program that a colleague and I developed, which aims to train staff and educate residents of Compulsory Drug Treatment Centres about HIV and AIDS. Everyone in Viet Nam and China who is found to use illicit drugs, spends from three months to two years in a compulsory centre, without a sentencing process. The goal of the education program is to equip residents of these centres who are not HIV+ve with knowledge, skills and attitudes leading to behaviours that will help them to remain HIV free once they re-enter the community. It also aims to help them care for those who have HIV or AIDS and to support them in the centre and later in the community – to reduce discrimination. For residents who are infected with HIV it aims to increase their understanding of the virus, to seek care and support and to act in ways that do not place others at risk of infection.

This project has focused my mind on behaviour, behaviour and behaviour.

In Viet Nam, and in China where the program was trialed a week previously, the major form of transmission of HIV is through the sharing of injecting equipment. This makes it imperative that those who inject are aware of the risks and are supported in their efforts to remain free from HIV. In a public policy sense this is intended to occur through the provision of drug treatment programs aimed at reducing the use of drugs, and hence the incidence of injection, and through the provision of harm reduction programs, including needle availability and education.

You might wonder why I am commencing a paper at a water education conference from this perspective. But in the circumstances that exist for injecting drug users, there is amazing immediate pressure on the education programs that are delivered - pressure to motivate appropriate behaviour choices that have immediate life-altering consequences. In parts of the public health arena, health promotion has a significant responsibility to influence change **NOW.**

It is my view that the sustainability challenges that we face, especially those related to water, create similar pressure on **environmental education** or **education for sustainability**. Not everyone shares my view - for some, the urgency level is not as intense. For example, many more people rate environment as an issue of concern in ten years time rather than now. This view is consistently expressed through the four *NSW Who cares about the environment?* surveys 1994, 1997, 2000 and 2003. But given the finite capacity of our planet, the growth of our population, the pollution and greenhouse impacts and the already significant depletion of our

natural resources, the clock is ticking - and much too fast. For example in 2003 the NSW State of the Environment Report "found that the NSW community had increased its ecological footprint by 23% in the five years between 93/94 and 98/99 when population grew by only 7%." Sure this data is old [and NSW only] but can any of you argue that the same trend is not apparent now in 2006 in your own State or Territory?

Those of us working to educate the community need to work smartly and to see changes happening now to counter this trend. Sustainability for our planet won't wait any longer for us to get our educational house in order.

In these circumstances this paper wrestles with behaviour and how education might be best used to promote behaviour change and to reinforce appropriate behaviours for water sustainability. The content emerges from a lifetime of work in trying to understand how human behaviour might be influenced by education.

Setting Behaviour within Context

The Various Impacts on Behaviour: It is important to acknowledge at the outset that people's behaviour is influenced by a number of factors and that education is but one of these. A person's upbringing, his or her socio-economic status, financial capacity, education level and capacity to act on available choices, form some of the context in which behaviour occurs.

More directly, behaviour can be stimulated a number of motivators established by the community and its government in order to promote what it deems to be appropriate action. These include:

- Economic stimulants [Are there financial reasons why …?]
- Regulatory stimulants [Do I have to? What do the laws say?]
- Peer group stimulants or social norms [What is the normative behaviour in this society/community? I will do what they do.]
- Public policy stimulants [Are there water restrictions in place? These prompts might be seen as a combination of regulatory and social norms.]
- Social structures [Is society and its institutions supportive of the behaviour? For example do council ordinances allow me to install a water tank at home?]
- Opportunity [Are real behaviour choices available now?]
- Structural stimulants [Are the structures in place to support this behaviour? For example; where would recycling be without kerbside collection programs?].

Each of these activities [stimuli] impacts on every individual differently. For some the law has little effect, for others it is a deterrent but will have no direct effect; these people don't think that they

will ever be fined for hosing off their driveway. Some only engage when the structures or price incentives are in place – for example, many people will only think about installing water tanks when price subsidies are available and installation is made easy through a government supported program. Often education is the glue that holds these other prompts together and moves them forward – what good is a law as a deterrent if no-one knows about its existence. There is little doubt from the literature that education influences people's knowledge skills and attitudes and for some people this translates into behaviour. But to achieve maximum impact education should be seen alongside and related to all of these other behavioral stimulants.

What is Meant by Education? For the purpose of this paper, education is any planned activity that is intended to impact on knowledge skills and/or attitudes of the people who are targeted by the program. For example, education may focus on staff of companies and institutions, children in schools and people at home or in the community. It may be carried in a vast variety of ways; face-to-face, through the media, by other written material, pamphlets, stickers, over the back fence or with massive television audiences.

Ultimately though, just improving knowledge and skills and affecting attitudes is not enough. In order to create a more sustainable Australia, education must impact on people's behaviour in both their personal lives and in their workplaces. It must influence the ways we live our lives, the way businesses operate and how householders live their lives; the choices we make about how much water we use and how we act to protect its quality.

Shifting Behaviour. But what does it take to achieve behaviour change? How do we use education to achieve the desired behaviour in most of the people most of the time, or even some of the people some of the time? What do we understand about water related behaviour and the motivators for change?

In helping to answer the crucial questions that all of us ask about how the water education program that we design might make a real difference, it is important to outline and discuss the thinking within some of the major models for behaviour change. These models that have been developed over the last sixty years and all contribute to our understanding of how to motivate people's behaviour through our education efforts. But they are just models and do not guarantee success. The concluding section of the paper integrates these models within some suggested principles about how water education practitioners might go about designing effective education programs for behaviour change.

What's the Fuss About? Hasn't Education already had some Impact on Behaviour? Yes. There is a substantial and increasing body of evidence to show that education has impacted upon behaviour, "Without a doubt environmental knowledge and public awareness are important factors influencing environmental policy and management" [Janice 2002]. But according to some commentators [and this author], it has not done this well enough or often enough or rigorously enough.

"Unfortunately, environmental education has not been that successful. While there has been a massive increase in the amount of environmental knowledge, there has not been much increase in the level of environmental action. Attitudinal studies have revealed a significant gap between what people say about environmental issues and what they do." Christensen 2005.

Whelan 2005 says that "my observation as a participant-researcher in the environment movement during the past decade is that education has not fulfilled its potential, that it is often considered by activists to be less effective than measures such as legislation."

Often it seems that we are focused on developing education that makes us [and/or the agencies that employ us] feel good that we are doing something to impact on the problem rather than being much more hard nosed about it. What do I mean by "feel good" education? This is education that might be identified by the following characteristics.

- Programs that are just aimed at everyone, regardless of language spoken at home, reading age, capacity to influence the problem or its solution.
- Education that treats the person to be educated as an empty vessel that can be filled with knowledge, a passive member of an "audience" not as a living, breathing, deciding person who is unique in their thoughts, feelings, values and behaviours.
- Programs that totally focus on knowledge; information rich but very poor in showing people how and why to behave appropriately. "Providing information is not wrong; relying on information alone is….. It is tempting to assume that providing information will act as a 'billiard ball', knocking into attitude and setting it rolling into behaviour change in a nice linear process. Unfortunately, this is a patent untruth; don't assume that information leads to awareness – or awareness to action". [Futerra]
- Educating that targets the wrong people. Why run a stormwater program in schools about if you want to change the immediate behaviour of adults in the community about what they put down the drain or into the gutter?
- Education based on "gut feel" alone and not on evidence, social research and evaluation. "Social research….is foundational to sustainability work in providing the knowledge required to design appropriate and targeted programs and initiatives" [McLoughlin 2005]

- Programs that make the boss [elected official] happy that something is happening. These might have a PR benefit but not real behavioural impacts.

With the sustainability challenges that we face now, "feel good" education is not good enough. It is nowhere near enough.

The Models of Behaviour Change

The following section summarises some of the models that have been developed to explain and frame behaviour change processes and motivators. Due to the constraints of time and space, this is not a comprehensive treatment of the theory - no model will be covered in detail. Nor is the coverage exhaustive; there are many other academics and others who have written on this issue and other models exist. Rather, each of the models discussed has a place in framing the author's thinking and they underpin the suggestions made within the *Some Principles Section* below.

The **Ottawa Charter on Health Promotion** [see Wass 1994 and WHO 2001]**,** developed at an International Conference on Health Promotion, in 1986, by the World Health Organization states that in order to be effective Health Promotion must address five core elements in an integrated manner: The model postulates that failure to develop programs containing all elements will reduce the possible impact of any one or two activities on the problem. People need to be educated and supported within a congruent policy and service orientation context. While this model has a particular orientation towards health, its general principles apply to education about sustainability.

- *Building Healthy Public Policy.* Health promotion [read…education for sustainability] will only be successful if it sits within a policy framework that supports the principles and intentions of the education efforts.
- *Create Supportive Environments.* The community has to be ready to embrace the behaviour that the education program is promoting. For some significant changes education is needed to seed the readiness of the community. For example water restrictions will be more fully and wholeheartedly accepted if the community understands the reasons for the restrictions. This needs to occur prior to the implementation of the restriction so that the community is ready to accept the proposed behaviour.
- *Strengthen Community Action.* Change occurs best when it is owned by the community. When community members are supported and strengthened, they will suggest, promote and embrace change. This principle promotes a supported "bottom up" approach, rather than the more prevalent "top down" programs. [see also Whelan, 2005]

- *Develop Personal Skills.* Achieving desired behaviour is often reliant on improving the skills of the participant in the program. The Ottawa Charter places great emphasis on this principle and indicates that often this occurs by face-to-face education.
- *Reorient Health Services.* This principle relates to the fact that health services need to mandate implementation of health promotion. This mandate should support the needs of individuals and communities for a healthier life, and open channels between the health sector and broader social, political, economic and physical environmental components. In sustainability terms, this principle would mean that all government agencies reorient their business to encompass sustainability. They would act as a model and impetus for industry, non-government organisations etc to reorient their activity towards sustainability.

When considering the application of the Ottawa Carter model in a water context some key questions emerge. For example is the community ready to drink recycled water or would it be beneficial to construct a program to build community readiness? How might community action be engaged to support this change?

Leon Festinger's **Theory of Cognitive Dissonance,** one of the earliest models developed was published in 1957 and has become one of the most influential theories in shaping views about the motivators on behaviour. This theory proposes that when individuals behave in a way that is contrary to their attitudes and beliefs they become anxious, and they are motivated to change their *attitudes* to conform to their *actions.* In terms of education programs this theory proposes that education messages should be framed in such a way that cognitive dissonance is constantly triggered by the program. Festinger argues that it is this process that leads people to shift their behaviour and line up their attitudes, with their behaviour. In this way more appropriate behaviours can be motivated. For example the following two messages are inherently contradictory - "we have limited amounts of water" and "I need to use a lot of water to clean, cook and tend for my garden." People have a problem with the inner contradiction of these two positions and will work to try to resolve that discord. Continual education messages [some about enforcement] to help people find a way through this dissonance are important to gaining the desired behavioural outcomes. These messages must acknowledge the personal changes that people have to make to achieve the reduced water use, along with messages emphasising the greater good.

The Stages of Change model put forward by Prochaska [1992 and more extensively in 2005] proposes that people progress through a number of stages in making change. This model urges the education program developer to determine the stage at which their audience is with regards

to the desired behaviour and to develop a program that moves them to the next stage. The five stages in this model are:

- *Pre-contemplation.* People are not intending to take action on the particular issue in the foreseeable future. They may be uninformed, under-informed, demoralised because they have tried to change previously with a negative outcome or just plain apathetic.
- *Contemplation.* People are interested in the issue, open to changing behaviour and intend to take action in the next six months.
- *Preparation.* People are intending to take action in the immediate future. They have often taken related actions in the immediate past and need prompting and support to take the next steps
- *Action.* The new behaviour is taken at this stage
- *Maintenance.* The new behaviour continues over time. It is often [and best] supported by others also behaving in that way, see normative behaviour above.

Prochaska agues that if the audience is at pre-contemplation stage, then there is no point in pitching the program at the action stage. People just wont get it. There is some consistency in this view with the 'creating a supportive environment' principle in the Ottawa Charter. People have to be ready to embrace the change [or the action being promoted].

The issue for education program deliverers is to progress people through the pre-contemplation, contemplation and preparation stages so that action can occur appropriately and responsibly. This is a major challenge because often all members of a particular group are not at the same stage and a multi-focused strategy is required. Also the tools available for moving from pre-contemplation to contemplation tend to be imprecise and often need to be purpose built. They include mass communication approaches that raise the issue or problem and try to engage people in considering it as an issue. Reducing water demand is a case in point. In years gone by most people in Sydney and other large metropolitan cities were not remotely concerned about this issue, except during some short periods in summer. Because of falling dam levels and intelligent communication about the issue, the community is embracing the finite availability of water as a real concern and strongly endorsing 'the reduce' messages.

The Health Belief model, proposed initially by Rosenstock [1974] and commented upon and expanded by many authors including Haisch and Hornung [2005], relates to how importantly people see the issue for them. In health terms Rosenstock postulates that people will take preventive action for their health and engage in health promoting behaviours if they believe that they are at personal risk of contracting illnesss [personally susceptible], if they are convinced that

the changed behaviour will be effective in reducing the impact [risk] and they decide that the proposed changes are do-able.

Taking this into an environmental context, people are more likely to engage in the desired sustainability behaviour if they see the problem as real and even immediate, and the behavioural solution as practical and do-able. This model closely aligns personal attitudes towards environmental problems and to a lesser extent knowledge about the nature of the problem, with desired behaviour and appropriate solutions that are being encouraged by the education program. This may help to explain why some water related behaviours have a higher take up rate than others. For example, while people in Sydney fairly readily embraced the 'wash your car on the grass' message-when that was not prohibited by water restrictions – smokers still throw their butts in the street. They don't see the relationship between butts and water quality.

Social Cognitive Theory [STC] was first put forward by Bandura during the mid 1980s. Essentially STC takes as its key proposition that learning about appropriate behaviour happens through observational mechanisms or modeling. People base their behaviour on the examples put forward by appropriate role models. Central to this in the STC model is the concept of self efficacy. This means individuals must believe that they can successfully behave in the desired manner. Self efficacy is a measure of how much control the individual believes he or she has over the situation. Common statements about water such as "What I do doesn't count… even if I reduce my water use we'll still have a problem because other people use too much" indicates a low self efficacy. In this instance it is important to build people's connection to the problem and its solution in a way that relates to activity with people in the pre-contemplation stage of the Stages of Change model.

It is important to note that successful appropriate behaviour builds a greater self efficacy, Failure to undertake the desired behaviour provides negative feedback and reduces self efficacy.

The linking of modeling to self efficacy is an important and useful concept for education for sustainability. It has long been a common factor in environment programs that modeling or demonstration is a key learning tool for behaviour change. This model supports that notion. However it does add the caveat that people need to be ready to make the change. They must have the self efficacy to engage in the change process.

Relating this model to water education means that programs will promote demonstration sites and spokes people as a way of seeding behaviour change. The behaviour that is modeled or demonstrated must be easily able to be undertaken by the target audience. It is little use

promoting behaviour that offends self efficacy where the technology is too expensive, or not readily available.

More recently the Canadian social marketer, Doug Mackenzie-Mohr has written and taught extensively about promoting sustainable behaviour that is based within the principles of what he calls **"community based social marketing."** While Mackenzie-Mohr has not really drawn his concepts together into a model, he does promote some real working principles on which programs should be based.

He argues that the challenge in achieving behaviour change is in translating knowledge and attitudes, or what he calls "good intentions" into action. This is clearly accurate. As argued elsewhere in this paper Much of our failure to achieve real shift is that we fail to build on the education related pre-cursors to behaviour - high levels of knowledge and responsible attitudes - and turn them into consistent appropriate behaviour.

He goes on to argue that in order to achieve behaviour shift, programs need to encompass the following components:

- Seek commitment from their target audience. *By this he means that education programs need to seek written [if possible] commitment from participants about what they will do.*
- Prompt appropriate behaviour continuously. *By this he means that signage and other prompts are important for the promotion of appropriate behaviour. He cites an example where "a prompt at the point of sale can dramatically increase the purchase of environmental products."*
- Build acceptable practices into normative behaviour. *By this he means that the more people who practice a behaviour more often, the more it becomes a social norm and the more fully it is sustained [and possibly extended] by peer example]. We can't really make something a norm however. It is really an outcome of what happens. For example, it could be argued that cleaning up dog pooh is now a water quality related norm amongst dog owners.*
- Provide incentives to reinforce appropriate behaviour. *By this he means that incentives of all sorts can assist to make the behaviour palatable. Incentives include financial subsidies [e.g. water tanks], compliments, and rewards for appropriate behaviour.*
- Remove external barriers: *By this he means that any restriction should be removed prior to the implementation of the program. For example there is no point in promoting water tanks to householders if there are barriers in the planning/approval processes that a Council has in place.*

Creating Behaviour Shift Programs for the Water Education Practitioner – Some Principles for Action

What does all of this mean for those of us who are designing, delivering and/or evaluating water education to achieve behaviour change? How do we integrate this theory into our day-to-day practice? What can we do to run water education programs that really influence behaviour?

In terms of framing these challenges I have taken all of the models discussed above and worked them through into a series of principles that guide my practice. I am offering these principles to water educators [sustainability educators] to help them to improve their educational practice. There is no point in understanding the theory if it does not influence the design, delivery and evaluation of programs.

Each of the principles below is related directly to the model or models upon which it is based.

1. **Engage in the theory of what you are doing**. Reflect on and talk with colleagues about the practice of education about water behaviour. All relevant models and theoretical frameworks should be considered, including some not discussed in this paper.
2. **Identify and maximize the connections between your education program and broader public policy interventions and services**. Education has its best effect when linked closely with other initiatives. For example if your program is aimed at reducing water use it should be framed within the policy around water restrictions and maintaining a sufficient quantity of potable water of high quality. [Ottawa Charter and also Stages of Change].
3. **Be clear about who is causing the problem and whose behaviour you want to change**. If it is not the behaviour of school students why are you running a schools program? [Health Belief Model and Stages of Change Model].
4. **Be aware of the current view of your audience about the issues.** Design your program to move them to a more complete view which still promoting action [Stage of Change model and the Health Belief model].
5. **Show people appropriate behaviour.** What is it that you want them to do? In some circumstances and taking great care about how you shape the messages, you might show them what you don't want them to do as well. [Cognitive Dissonance Model and the Social Cognitive Theory].
6. **Expect behavioural outcomes from your programs.** Look for these outcomes in your evaluation. Don't be fooled by the line "it's all too hard." If you determine that your program is about behaviour change in its objectives then push to find it and report on it. [Community based Social marketing and all other models discussed].

7. **Measure your program for change**. Look for immediate change [or behavioural intent] and actual behavioural change over time - and not too long away [Cognitive Dissonance Model and all other models discussed].

8. **See individual behavioural change and at work operational change as analogous outcomes to be sought.** It is not appropriate for behaviour to be responsible at home and not responsible at work. Use the positive home example to influence operation work practices [Cognitive Differences Model and the Stages of Change Model].

9. **If you can get face-to-face time to deliver your education program then do so**. In very general terms programs are more likely to have behavioural outcomes if they have a face-to-face component and seek real commitment. [Community Based Social Marketing and Ottawa Charter] But it is acknowledged that this is not always possible

10. **Use behaviour prompts and get commitment from your target as much as possible**. People need reinforcement for the changed behaviour to become normative in their lives. [Community based social marketing].

11. **All education methodology can impact on behaviour.** Don't believe the line that 'television campaigns don't change behaviour." This is patently untrue across the commercial sector, why should it be true for advocates of social change? As with all other education efforts, behaviour change can occur through mass media programs if thoughtful, well informed program design and delivery is undertaken. [Ottawa Charter and the Stages of Change Model].

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