

Educating for Sustainability: a case study in effectiveness

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1. Why is paper consumption an important sustainability challenge?

Reducing paper consumption in the College has been identified as a sustainability challenge because of the associated economic and environmental costs related to the depletion of natural resources. However it is in examining the various social dimensions embedded in the attitudes, systems and structures within the school that we find the barriers to, and opportunities for, a reduction in paper consumption as part of a range of sustainability gains.

The College is a non-government high school in Canberra, with students from year 7 to 12. A study conducted by The Australia Institute in 2005 revealed that there is a correlation between a higher level of disposable income and levels of waste in Canberra, with its young people being the most wasteful in the country (Hamilton, Denniss & Baker 2005, p.viii). Drawing on this contextual study, we can assume that the students at the College are generally from a demographic that has a high level of consumption and waste. In addition, the school can be regarded as an institution that perpetuates what Illich described as “the Myth of Unending Consumption. This modern myth is grounded in the belief that process inevitably produces something of value and, therefore, production necessarily produces demand” (1970, p.38). This phenomenon is reflected in the amount of paper consumption and waste at the College.

In 2010, the College spent approximately \$15,000 on paper. Each year the school orders 600 boxes of unrecycled paper containing 5 reams of 500 sheets equating to 1,500,000 pieces of paper. In a school of approximately 1,000 students and 200 staff this averages 1,250 sheets per student and staff member each year¹. Students are given a quota of \$30 a year for juniors and \$50 for seniors for printing assignments, making up approximately 30% of paper usage. A recent analysis revealed that this does not cover the costs of the paper consumed by students and therefore is not economically viable. At the same time, approximately 27 wheelie bins each with a 25-kilogram capacity for paper recycling are collected each month. Each year the College pays \$3,000 for the removal of these bins. Whilst there is no comparison or benchmark for these costs the fact that it has been identified as a problem within the school means that it poses a sustainability challenge.

Some of the reasons given for the high paper usage are a) the preference, especially amongst teachers, to have hard copies to read because it is easier than reading off a screen, b) the convenience of being able to take paper copies home with them to mark, and c) being able to cross reference and skip back and forth within a document. Another reason is that it is a requirement of the Board of Senior Secondary Studies that senior students' assessment tasks be in hardcopy. Senior students make up approximately 10% of the school. This requirement restricts the potential reduction in paper consumption for assignments, however it does not restrict the College switching to recycled paper as a more environmentally sustainable alternative.

¹ This only refers to white A4 paper i.e. it does not include coloured A3 paper used for student reports or letterhead.

In recognition of the International Year of Forests the College's Environmental Sustainability Team (EST) launched a campaign to reduce paper consumption in the school. As part of the campaign the EST is conducting awareness-raising activities around the value of forests in providing wildlife habitats and the impact of deforestation in contributing to climate change (Hesketh 2011, p.5). The group is illustrating the link between deforestation and the other environmental impacts of paper production and consumption including the water and energy needed for its production, plus the by-products of water and air pollution. The EST is also looking at sourcing either recycled paper or paper from plantation timber as a more environmentally appropriate alternative, at the same as encouraging the reduction in paper use.

Whilst awareness-raising in regards to the environmental and economic impacts of paper consumption in the College can be used as a tool to raise interest and motivate others to consider their paper consumption, addressing the broader social dimensions is what will determine whether a reduction in paper consumption in the school is sustainable.

2. a) What are the drivers of this situation?

Examining social context is the key to understanding the barriers to reducing paper consumption within the school and broader community. This is also true of other sustainability issues. Some of the drivers come from a social context that encourages a materialistic lifestyle that runs counter to caring about the environment (Hamilton, Denniss & Baker 2005, p.viii), and this is often enhanced by the nature of many schools as traditional teaching institutions that fail to encourage pupils questioning their lifestyle choices.

Our disconnection from the environment and nature is reflected in our need to protect and screen ourselves from it (Fisher 2006, p.46). A materialist lifestyle with large air-conditioned houses, shopping malls as entertainment venues, and a high dependence on our cars, appears to 'protect' us from the elements. This dualistic "split between humans and nature" (Fisher 2006, p.xx) then makes it hard for us to respond to environmental issues such as deforestation, climate change and pollution.

This disconnect can be linked to the model of teaching often applied in our schools. The majority of teachers use a traditional teaching approach that is focused on memory (Caine & Caine 1995, p.44). This is a teacher-dominated method or what Freire calls the "banking concept" where the teacher is the depositor of knowledge and student is the receptor. This model is also based on the assumption of the dichotomy that humans and the world are separate, that is we are in the world not with the world (Freire 1972, p.49).

This system affects the way we learn and as a consequence how we engage with nature.

A school system that works on instruction versus learning is structured for students to meet specific qualities and competencies and is based on the assumption that learning only takes place in school (Illich 1970, p12). Illich identifies this as a form of social control and that when young people have become conditioned to this type of learning they are prepared for other forms of institutionalisation and that "in a school world the road to happiness is paved with a consumer index" (1970, p.38-40).

Mackay (2010, p.19) expresses this phenomena by saying:

“Students who become obsessed by the marks they are getting tend to be less engaged learners – in the richest sense of ‘learning’ Marks become the goals. Learning, questioning exploring ideas, making mistakes – all hallmarks of engaged students – tend to be diminished in pursuit of rewards.”

Whilst not all staff and students hold these attitudes it could be concluded that this is the dominant paradigm within the school as it is reflected in the resistance from a large amount of teachers not wanting to try new teaching methods and the limited support across the school to support recycling and other sustainability initiatives.

In summary, the social context in which this sustainability challenge (reducing paper consumption) is placed is one where consumption and results-focused education embodies a dominant dualistic worldview. Trying to reduce paper consumption is counter-intuitive to the systems, thinking and teaching taking place. What might look like apathy or not caring for the environment is more accurately and helpfully observed in this context as a way of viewing the world that sees the individual as somehow separate from it.

b) Potential second (and beyond) order consequences of the project

Reducing paper consumption offers a solution to the economic and environmental problems associated with this sustainability challenge. However, as discussed, unless the social drivers are addressed the perceived concern will not be overcome. That is, through examining the model of teaching, and challenging the worldview of both staff and students, potential second order consequences may also be addressed.

In the Department for Environment, Heritage and the Arts (2009, p.5) document *Living Sustainably: the Australian Government’s National Action Plan for Education for Sustainability* one of the key aims is to reorient the education system towards sustainability. That is, teaching sustainability and sustainable resource management within the school environment.

It could be argued, however, that what is needed is a reorientation of the way schools teach and how resources are perceived and valued.

A methodology that is being adopted by a small number of teachers in the College is Brain-Based learning. This methodology provides an alternative to the traditional memorising model, structuring a more meaningful approach that encourages “students to participate in their learning process and progress” (Caine & Caine 1995, p.44-45). The Brain-Based approach also recognises that students can learn from their peers, community members and elders. Students are able to challenge ideas and relationships, including their relationship with their teacher. Students are also made responsible for their own behaviour and group dynamics (Caine & Caine 1995, p.47).

The Brain-Based approach is one alternative that is more in line with the liberation-oriented education advocated by Freire and Illich that “consists of acts of cognition, not transferrals of information” (Freire 1972, p.5). This model encourages students to engage in critical thinking, and the relationship between teacher and student is based on equality (Freire 1972, p.49; Illich 1970, p.49). This equips students with problem posing and resolving skills that they can use to understand and question the world (Freire 1972, p.56).

Ultimately, for this model to work, the entire school system must be reoriented (Caine & Caine 1995, p.45). If the College was to comprehensively adopt this methodology, it would gear itself towards what Schumacher described as an arena “for transmission of ideas of value, of what to do with our lives”. More importantly it would better equip students with the ability to form and own their own values, and give meaning to their lives (Schumacher 1973, p.75-9). A desirable and more likely outcome from all this would be where students and staff intentionally choose “a life of action over a life of consumption” (Illich 1970, p. 52) through “institutions that support personal growth” (Schumacher 1973, p 53).

In short, through examining the drivers of the sustainability challenge we have uncovered some fundamental attitudes and systems that act as a barrier to overcoming this challenge. However if these barriers, including traditional teaching models and materialistic lifestyles, were to be overcome then longer-term and broader sustainability impacts could be reached along with opening up even more fundamental areas of change. For example, exposing the myth that material growth has no limit and realising that consumption is a poor measure of happiness (Moriarty & Honnery 2008, p.868).

3. What are the opportunities for change?

There are a number of opportunities for change in relation to reducing paper consumption in the College. However as discussed these changes require a fundamental shift in the attitudes of students and staff as well as having the systems and structures to support that shift. This deeper change can in turn result in broader sustainability gains beyond just reducing paper consumption.

Changes however are often confronted with fear and resistance, and while “we overestimate change, we underestimate inertia” (Moriarty & Honnery 2008, p.868). Some may perceive change as a threat to their job, their power, a challenge to ‘the way things are’.

To bring about change means acknowledging varied individuals’ needs to be recognised, and for their views to be regarded as legitimate. This is an essential part of bringing people along through a process of change (Mackay 2010, p.3).

Listening to colleagues and their resistance to change reveals more than the specifics of paper consumption. It can tell us a lot about their worldview and their perceived role in it. For example, a staff member at the College initially seemed resistant to the idea of reducing paper consumption, but after engaging in a conversation about this, it was revealed that this person had actually advocated for double-sided printing to other staff. Acknowledging the contribution they are making and revealing the positive changes they have already made becomes an opportunity to engage them in further change.

For students there may be resistance to the more fundamental changes being proposed, in teaching models and the challenging of worldviews, as they are conditioned to a certain style of education. Then again, there is resistance to the traditional model as students often complain that they do not like to be told what to do and often call for teachers to set a better example when it comes to sustainability practices.

Changing the way students learn, to one where they question and explore assumptions about the 'way things are' can be liberating for students and teachers alike.

The changes proposed here can invoke increased openness to becoming more aware of nature and the consequences of our actions. In this context, reduced paper consumption is more likely to be achieved as part of broader range of integrated sustainability initiatives.

Encouraging teachers to reduce paper consumption by getting junior students to email their assignments, or using interactive white boards instead of printing materials for classes, might be part of an effective approach, but they are much more limited in their effect. As technological 'solutions', they leave unexamined the general drivers and resistance to change. This is much more powerful than the isolated 'technological fixes'. Do the teachers feel like these changes are being imposed on them, and do they think the changes are worthwhile?

The original sustainability goal was to reduce paper consumption in the College. Understanding the worldviews and drivers that underpin this sustainability challenge are fundamental to not only bringing about sustainable change to this issue, but also creating the potential to bring about much broader positive change. Another way of describing this change is as David Suzuki (2010, p.71) eloquently puts it:

"Let's look at the world through different eyes. What do we really require to live full, rich, healthy lives? Rather than being separate or apart from the rest of nature, we are deeply embedded in and utterly dependent on the generosity of the biosphere".

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