



executive summary

an evaluation report of the ACT
Australian Sustainable Schools
Initiative 2010



Prepared by Lorraine J Larri for Climate Change and
Natural Environment Program Implementation

ACT Dept of the Environment, Climate Change,
Energy and Water

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executive summary

an evaluation report of the ACT Australian Sustainable Schools Initiative

The Australian Sustainable Schools Initiative (AuSSI) supports schools to become ecologically sustainable. It is delivered in all Australian States and Territories and encourages a process of change that is holistic, employing an integrated approach to environmental management involving the whole school site, whole school community and all aspects of the curriculum. It is sustainable in that environmental management becomes an ongoing part of school management, achieving measurable social, educational, environmental and economic outcomes.

ACT AuSSI is strongly linked to Australian and ACT Government Initiatives, such as, *The Melbourne Declaration on Educational Goals for Young Australians* (December 2008); the Australian Government's National Action Plan for Education for Sustainability, *Living Sustainably* (2009) and the Australian Government's Strategy for the United Nations Decade of Education for Sustainable Development, 2005-2014 (UNDESD), *Caring for our Future* (2006); the Australian science curriculum K-12; the ACT Climate Change Strategy *Weathering the Change*; and the ACT Curriculum Framework, *Every Chance to Learn*.

The ACT AuSSI was established through a pilot in 2006 and has grown to include most ACT schools i.e. 112 (88%) of the total 127. A significant majority of ACT schools (94% or 105 schools) have been involved in the AuSSI for over one year and up to three years or more.

ACT AuSSI is managed by the Department of the Environment, Climate Change, Energy and Water (DECCEW) in partnership with ACT Department of Education and Training (DET); Catholic Education Office (CEO); and Australian Independent Schools Association (AISA).

The Sustainable Schools Coordinators within DECCEW work closely with schools to encourage a whole school approach, set measurable social, educational and

environmental outcomes, and develop a school environmental management plan (SEMP). Partnerships have been developed with several organisations to deliver the initiative.

The purpose of the evaluation was to consider the program's achievements in relation to the following three areas:

1. The impact that the ACT model has had on reducing the ecological footprint of schools.
2. The ways in which behavioural change has contributed to this reduction.
3. The degree to which the model and approach is impacting on the wellbeing of individuals and the wider school community.

The evaluation is a 'working document' for the ACT AuSSI Coordinators to inform future development and delivery of the Initiative.

The findings will be used by DECCEW for reporting purposes, and included in their annual report to the Australian Government Department of Sustainability, Environment, Water, Population and Communities (SEWPaC). The full evaluation report can be found at www.sustainableschools.act.gov.au/schools

The methodology for the evaluation included a mixed method approach (both quantitative and qualitative) that involved:

- ▶ online questionnaires sent to ACT AuSSI contact teachers in each participating school; a survey for students (year 4 and above); a survey for parents of students in ACT AuSSI schools; non-AuSSI school Principals, and
- ▶ face-to-face focus groups with Principals (or leadership team representatives), teachers and students.



findings

1 Confidence in the findings - this was a sufficiently representative sample on which to base judgments about experience of the most 'engaged' primary schools

The sample sizes for surveys originally envisaged that greater numbers of individual teachers and students in each school might respond. In the end, 27 (or 24%) of the 112 ACT AuSSI schools were represented by a mix of both quantitative and qualitative data primarily from online surveys. The data is weighted towards primary schools (i.e. 26) and therefore was only a sufficiently representative sample to draw conclusions about the primary school experience. There were 43 respondents to the student survey, and 10 for the parent survey. Students were from Years 4 (44%), 5 (35%), and 6 (21%) primary schools. Focus groups were conducted for Principals (12); teachers (13); and students (12).

The relatively small sample size means that conclusions are indicative of trends for those schools sufficiently 'engaged' in the program to have wanted to contribute to the evaluation.



2 The impact that the ACT model has had on reducing the ecological footprint of schools

The evaluation found that the required structures for the reduction of school's ecological footprints were in place and extrapolation from the available data suggests the program is likely to have achieved significant reductions. Quantifiable data on resource usage reduction from the ACT AuSSI was limited. However, at the time of this evaluation ACT AuSSI was taking steps to address this issue.

The structures that support the reduction of school's ecological footprint include:

▶ A Leadership Team and School Environmental Management Plan (SEMP)

There were 13 schools (i.e. 52% of schools involved for over a year) that had both a 'Team' and a SEMP, 7 schools also had established partnerships. In general, schools needed to be in the program for at least a year or more to be able to establish these structures.

▶ The ACT AuSSI audit and accreditation process

Schools have been encouraged to focus on one or two resource areas at a time. Most schools select 'Waste' and 'Water' when they commence ACT AuSSI and therefore there have been more audits and accreditation in these areas. As schools become accredited in these two areas they progress onto the remaining focus areas (energy, biodiversity and curriculum). Survey data reflects this focus i.e. most of the auditing reported by the 27 schools that responded was in relation to 'Water' and 'Waste'. Schools are likely to take one to two years to reach a stage sufficient for 'Accreditation'. So far, 25 schools have

achieved 'Water' accreditation; 22 have been 'Waste' accredited. For these schools the program estimates there has been a 37% reduction in water consumption (30,000 kilolitres) over the 12 month period, saving over \$61,000; and a 58% reduction in waste to landfill over the 12 month period that was tracked. Professional development and teaching resources are available for all the focus areas.

▶ Program support

Teachers rated the support they received from the ACT AuSSI to conduct any or all of the resource audits (e.g. water, waste and energy audits and the school biodiversity survey) as very useful (95%). The program has shown that its assistance is valued.

The majority of schools rated the assistance they received from the ACT AuSSI as being very or extremely useful (i.e. 83% or 15).

The major strengths of the program were considered to be:

1. Professional development sessions (82%, 14)
2. Publications e.g. Best Practice Guide, Curriculum resources (77%, 13)
3. Free walk-through audits (65%, 11)
4. Regular updates and information about environmental events (65%, 11)

Getting schools to collect and analyse systematic resource usage data is a significant ongoing challenge. The ACT AuSSI coordinators have minimised the data required so that schools provide final data for 'Waste' only. ACT AuSSI Coordinators collect the data for 'Water' and 'Energy' to ensure accuracy and consistency.

3 The ways in which behavioural change has contributed to this reduction in the ecological footprint of schools

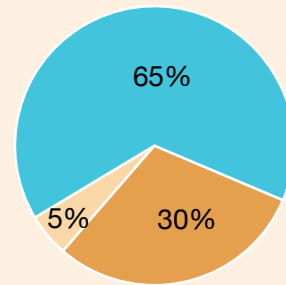
ACT AuSSI schools have been actively seeking to change the resource usage behaviours of their staff and students through changing behaviours and where possible, changing school infrastructure. The data indicates that school communities are changing their daily behaviours to be able to be systematic in their approach to sustainability. 58% to 80% of the schools reported having done some or all of the water, waste, energy or biodiversity actions that ACT AuSSI promotes before engaging in the program. The program has been a catalyst for a fifth to a third of schools who previously had not implemented any sustainability actions.

The degree to which schools attributed this behaviour change to involvement in the ACT AuSSI was highly significant ranging from an 84% change for 'biodiversity'; 95% for 'water' and 'waste'; and 100% for 'energy'. The areas where behaviours changed most significantly as a result of the ACT AuSSI (i.e. 'a lot') were in relation to 'waste' - 65%; and 'water' - 37%.

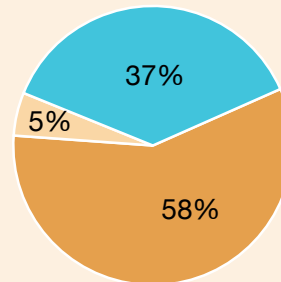
Teachers and students indicated that significant attitudinal and behaviour change was occurring both at school and at home. Teachers estimated the most significant changes in their students' attitudes and behaviours were in relation to waste, biodiversity and water. Slightly less change was observed in relation to energy. By comparison, student responses to their behaviour change 'before' and 'now' as part of AuSSI were similar to the teachers' responses. Student results show most change in relation to 'energy' and 'water', and 'the environment in general'.

Behaviour changes in relation to water, waste, energy and biodiversity since becoming an ACT AuSSI school

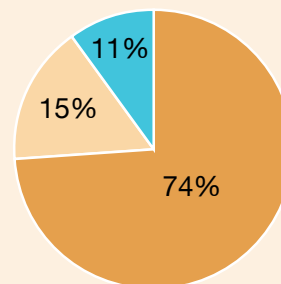
● a lot ● a little ● no change



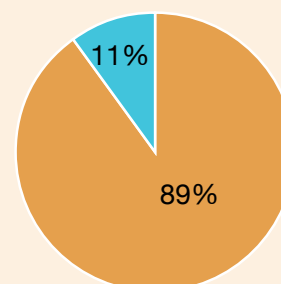
Waste management



Water conservation



Biodiversity protection/improvement



Energy conservation



A majority of students (i.e. 50% or more) reported doing nine of ten sustainability behaviours listed in the survey 'a lot'. There was a strong consistency of behaviour between school and home in most items except for

composting, which was more likely to be done at school. The responses from students:

"I sort my waste into the correct colour coded bin to recycle" (88% at school, 76% at home)

"I try to recycle paper when I can" (88% at school, 76% at home)

"I save organic scraps for the compost or worm farm" (81% at school, 60% at home)

"I choose the half flush on the toilet if there is one" (69% at school, 74% at home)

"I make sure that lights are turned off when I leave a room" (60% at school, 66% at home)

"I make sure I turn off the computer I am using when I'm finished" (57% at school, 50% at home)

"I notice local birds and animals" (57% at school, 61% at home)

"I notice how local plants are growing" (55% at school, 57% at home)

"I report a dripping tap or water leak if I see it" (52% at school, 59% at home)

"I turn the water tap on slowly and use as little as possible" (36% at school, 38% at home)

There were 38 students (or 90%) who felt ACT AuSSI had changed what they did either 'a lot' or 'a little' at home. This is an important finding and shows those students are aware of changes in their behaviour due to ACT AuSSI.

Teachers and students provided examples of behaviour and attitudinal changes they observed in relation to themselves and others at school and at home, as well as the school environment. The changes were across all categories of resources (water, waste, energy, biodiversity). Students also included kitchen / vegetable gardens and general sustainability issues. Parents' observations of changes in staff and students confirmed what both these groups said about one another.

The factors that contributed to success in behaviour change included:

► **Infrastructure changes in relation to Waste, Water, and Energy**

These included colour coded and labelled bins for sorting waste; compost systems and worm farms; purchasing and installing energy efficient appliances and lighting; and installing dual flush toilets.

► **Strategies adopted by schools to promote behavioural change**

The strategies considered to be most useful by schools relate to the active involvement of students and the whole staff in planning and implementing practical actions that have been integrated into the everyday operations of the schools and become part of the school culture (i.e. the whole school system). Teachers considered the most effective strategies were those that had a high degree of student involvement and ownership in practical, relevant activity-based learning.



▶ **Curriculum integration of Education for Sustainability (EfS) into the ACT Curriculum Framework**

This is a strength of ACT AuSSI that was established early in the program. The resource folder *'Educating for Sustainability through the ACT Curriculum: Units of work to educate for an environmentally sustainable future'* is provided to all schools. 'Sustainable Schools' is listed on the ACT Department of Education (DET) website as a component of school-based curriculum development¹.

A majority of teachers (18 or 94%) considered that units of work in the *'Educating for Sustainability through the ACT Curriculum'* guide were very or somewhat useful.

Many of the teachers surveyed are working to integrate EfS into Later Childhood Years 3-5; Early Childhood Years P-2; and Early Adolescence Years 6-8. The most typical areas of integration into school based curriculum for AuSSI schools are: Social Science, Science, the Arts and Technology. A consideration for ACT AuSSI will be how it now uses this expertise to revitalise and renew curriculum integration so that its currency is maintained. For example, through looking at more recent ACT DET priorities such as the 'Literacy and Numeracy Strategy 2009-2013'.

¹ See the ACT Department of Education and training website <http://www.det.act.gov.au/teachingandlearning/curriculumprograms>

▶ **Strong commitment, engagement and leadership of the Principal and / or School Executive**

Survey data shows that the following leadership behaviours are most significant for the successful adoption of EfS:

- support and encouragement of the EfS/ Environmental Leadership Team
- enthusiasm about achievements and successes
- active assistance to build on achievements and keep going
- removing barriers and empowering people to change; they are 'enablers'.

The following comments are from teacher focus groups and surveys about the leadership role played by their Principals.

"They have been very supportive in getting ALL teachers and the Building Services Officer on side. They back up the environmental leadership team any time we need them to"

"The Principal has made supporting our environment program a component of our teachers' Professional Pathways, given generous time allocation to staff to implement, manage and run the environment program and actively encouraged the school to become an AuSSI accredited school"

"Principal support is imperative - the inspiration from the top is critical: - supportive in time/finances - total belief in the vision of being sustainable"

Principals who participated in the focus group were known for their ongoing commitment and achievement as leaders of change in EfS. They were asked what they considered to be the key ingredients of their leadership styles and the ways they approached implementation of the ACT AuSSI in their schools. They provided useful insights into change management in EfS in ACT schools. An excerpt of these is presented below:

Excerpt of key leadership ingredients from focus group with Principals of ACT AuSSI schools

- Lead by example, be a role model, show that the program is valued by leadership and that it is a priority; communicate on many levels why the school is doing the program, how it is progressing, and its achievements
- Aim for student ownership and efficacy - involve students in ways that increase their agency
- Make sure there is visible support and it is resourced with people and money. Ensure that physical resources are linked with action so there is a sense of purpose and apply for lots of grants e.g. solar panels, water tanks, biodiversity of school grounds
- Have a team concept and promote collective ownership of sustainability education principles where roles are embedded in the school decision-making bodies and people are given agency so that if the leader left the program it would continue
- Give time for planning and putting processes and structures in place
- Collect data by implementing an environmental tracking system with graphs
- Support teachers and students to participate in learning experiences provided by the ACT AuSSI
- Consciously build in sustainability values and attitudes, they are part of the program. This will lead to systems thinking where people think of the consequences of choices and impact on the environment. This will involve supporting creative problem-solving and braver decision-making approaches.



▶ Student leadership

Data from the focus group with students who were identified as being environmental leaders indicates that the children remembered significant experiences about the environment as early as three and four years of age.

The students defined leadership in terms of communicating clearly and simply; making new tasks fun and easy; and being positive role models. Students particularly valued the opportunities to show leadership because they felt their ideas were listened to and valued by adults and other children. Their comments indicate that it contributed to their sense of wellbeing. The students had definite ideas for the future actions they wanted to achieve. These related to creating change through individual action as well as influencing change in society more broadly.



▶ Teacher professional development

ACT AuSSI is meeting the professional development needs of the Primary School teachers. Apart from the 'Best Practice Guides'², the other top three elements of support involve ongoing personal contact e.g. conducting audits, professional development sessions, e-mail and phone support. These elements are the most resource intensive and the program will need to consider how to meet the ACT schools expectation for this ongoing support.

Curriculum materials involve collaboration with DET to ensure their currency. Due to the lack of response from high schools, the program will need to survey a sample of these teachers to better understand their professional development needs. The overall satisfaction of primary school respondents with support or resources provided by ACT AuSSI was very high.

There was strong agreement amongst respondents representing the schools that the main professional benefit for teachers of being part of the ACT AuSSI has been:

Increased knowledge, understanding and skills relevant to sustainability and environmental education (16 of 17 respondents agreed).

²The Best Practice Guides provide step-by-step actions schools can take to become more sustainable in each of the focus areas.

4 The degree to which the model and approach is impacting on the wellbeing of individuals and the wider school community

“The whole AuSSI program has helped us to promote and change the school culture to an even more positive one and one that we are all proud of - children, parents and staff work together to further promote sustainable schools programs”

Comment by a teacher from the School Survey



There have been significant positive impacts on the wellbeing of students as a result of schools implementing the ACT AuSSI. Anecdotally, the relationship of wellbeing to EfS is known to produce positive effects for students. The inclusion of wellbeing in this evaluation of this topic is an important and ground-breaking development in EfS research. Teachers and students completed survey items that were designed to gather data about this³.

³The survey items referred to were based on dimensions of student well-being that were identified by the Australian Council for Education Research (Fraillon, J, 2004, ACER). This issue is also discussed in the full evaluation report, Section 2.2.1: *Limitations of the methodology and implications for conclusions*

Teachers identified significant positive impacts of EfS for their student’s wellbeing across most dimensions. The most impacts were in relation to:

- **Self-efficacy:** the degree to which the student believes they are effective - able to organise, implement and adapt strategies to meet desired outcomes
- **Spirituality:** a positive sense of meaning and purpose in life
- **Self-esteem:** the way a student feels about themselves
- **Engagement:** with the learning process and the school community
- **Curiosity:** an intrinsic desire to learn more.

87% (34) of the students overwhelmingly agreed that, ‘doing things for the environment made them feel better’. Their positive feelings related to all the items designed to link with the dimensions of wellbeing listed above.

Between 85% and 95% of students were in agreement with the following wellbeing statements:

“The environmental skills I’m learning are useful and I can use them outside school as well”

“I can learn from others and hear their ideas”

“I feel like my teacher respects my efforts for the environment”

“I enjoy being part of team projects for the environment”

Between 64% and 82% agreed with the following:

“I enjoy learning about the environment and like coming to school because of this”

“I’m involved in decision-making for the environment and this feels good”

“I have improved something in the environment and this makes me feel that I’ve achieved something”

“My ideas are valued”

“I feel like I belong”

“I feel more confident about myself”

“I feel like my classmates value my efforts”

Students also stated other ways in which they felt better about themselves because they were doing environmental activities:

"I feel like a plant with water"

"I feel like I'm doing better things for Australia"

"I feel happier and more safe"

"I feel really proud of myself because I know that I'm doing the right thing"

"I feel like I can help around our school, my home, and anywhere really, and that is respected by most people"

Teachers are observing educational and social benefits for their students, and student engagement in learning has increased

Teachers have identified educational and social benefits for their students. As well as the expected benefits in relation to environmental education content, all of the teachers who responded considered that students were becoming re-engaged in learning or more engaged than previously, and that teaching and learning outcomes from 'Every Chance to Learn' were being met. There were also strong indications of improvements in school morale; inter and trans-generational collaboration and cooperation; and positive impacts towards improving student behaviours.

There have been a broad range of environmental benefits

Teachers and students listed a broad range of environmental benefits that they felt had been achieved. These included observable positive changes in the physical infrastructure of their school and less tangible attitudinal shifts.



5 Conclusions and implications for ACT AuSSI

The evaluation found that:

The required structures for reduction of schools ecological footprints are in place and the program is likely to have achieved significant reductions in ecological footprints of schools but quantifiable data on resource usage reduction from the ACT AuSSI is limited and not sufficiently representative of the 112 schools in the program. Steps are being taken to address this.

The schools in the program have achieved a range of behavioural changes in relation to resource management by implementing the strategies promoted by ACT AuSSI. Curriculum integration of EfS into the ACT Curriculum Framework is a key strength. Leadership by the Principals and their School Executive teams has been a significant enabler contributing to this success. Student ownership and involvement is leading to a body of youth who are developing strong leadership skills. ACT AuSSI now has data about leadership, of both the Executive and students, in schools that it can promote. This will strengthen further implementation.

It is possible to research the link between improvements in student wellbeing as a result of implementing EfS. Teachers and students provided strong evidence of significant positive impacts on the wellbeing of students undertaking environmental sustainability activities. ACT AuSSI now has the beginnings of an approach by which to research and evaluate this issue further.

recommendations

Recommendation 1.

It is imperative that ACT AuSSI prioritise effort to collect and analyse available data that will enable both schools and the ACT Government to quantify achievement in reducing school ecological footprints. The data collected will need to be consistent with the national reporting requirements and provided to each school as feedback on performance.

Recommendation 2.

It is recommended that ACT AuSSI in collaboration with the ACT Department of Education and Training (DET) review their curriculum support documents with a view to updating materials and addressing any gaps. The intention is to better link with more recent ACT DET policies (e.g. Literacy and Numeracy Strategy 2009-2013') and national curricula developments (e.g. the Australian science curriculum K-12 sustainability framework). This is intended to maintain the currency of ACT AuSSI.

Recommendation 3.

Not all the 13 strategies promoted by ACT AuSSI, and considered best practice in EfS for achieving behaviour change towards sustainability, are being equally used. It is recommended that ACT AuSSI continue to promote the strategies that focus on student involvement and ownership, and are practical, relevant activity-based learning. The other strategies may be of more use in specific contexts or have greater relevance as schools progress through stages of implementation.

Recommendation 4.

In light of the findings related to the importance of Executive Leadership in the adoption of EfS it is recommended that ACT AuSSI develop mechanisms that acknowledge and celebrate the role of the School Executive Leadership Teams in contributing to successful change management towards EfS. In particular, in promoting knowledge of effective leadership practices and embedding these in educational management development.

Recommendation 5.

In relation to student environmental leadership development, it is recommended that ACT AuSSI maintain and further develop opportunities for students to develop as leaders within their schools, the ACT and more broadly. Activities should include opportunities generated by ACT AuSSI as well as linking with local, regional, national and international events. This could be consolidated into a calendar of events for participating schools. Opportunities should draw on the elements of significance to students i.e. showing other students how to do things, being heard by adults and having good ideas acted upon.

Recommendation 6.

The ACT AuSSI Professional Development is meeting primary school teacher's needs to a high degree. Consideration needs to be given to the resources required to meet the ongoing expectation of support involving personal contact e.g. e-mail and phone support.

Recommendation 7.

In order to better understand the needs of high school teachers, it is recommended that the program conduct a brief telephone survey of a sample of these teachers.

Recommendation 8.

In relation to wellbeing, ACT AuSSI should consider further developing, monitoring and reporting on the links between wellbeing and ACT AuSSI.

