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Using DEMO to evaluate and enhance schools outreach programs: an example from the South Coast of New South Wales

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Publication Details

Austin, K. & Heath, J. (2010). Using DEMO to evaluate and enhance schools outreach programs: an example from the South Coast of New South Wales. 2nd Annual Student Equity in Higher Education National Conference (pp. 1-10). Australia: National Centre for Student Equity in Higher Education.

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Keywords
programs, outreach, schools, enhance, evaluate, south, demo, example, coast, wales

Disciplines
Arts and Humanities | Social and Behavioral Sciences

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This conference paper is available at Research Online: http://ro.uow.edu.au/asdpapers/304

Using DEMO to evaluate and enhance schools outreach programs: an example from the South Coast of New South Wales

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Abstract

The Design and Evaluation Matrix for Outreach (DEMO) was formulated from the research in the 'Interventions early in schools as a means to improve higher education outcomes for disadvantaged students', commissioned by the Department of Education, Employment and Workplace Relations. DEMO is used to evaluate the University of Wollongong (UOW) and Department of Education and Training (DET) Year 10 Connect and Explore schools outreach program. The original version of this program was enhanced following frank evaluation by both partners – the University and liaisons from each of the secondary schools involved. The revised program combines aspects across four key strategies of assembling resources, engaging learners, working together and building confidence. Qualitative feedback from students and teachers indicate that the revised program is more effective in meeting aims and providing an effective aspiration building initiative for students. An action research methodology provided the framework for the iterative, reflective approach to deployment and enhancement of the Year 10 Connect and Explore outreach program.

Introduction

The Year 10 Connect and Explore (Yr10CE) program is an aspiration raising program offered to Priority Funded High Schools (PSP) in the Illawarra and Shoalhaven areas on the New South Wales South Coast. The Yr10CE engages student communities through a program rather than targeting individual students. The Yr10CE program shares common aims and targets with similar programs offered by Australian and United Kingdom universities as surveyed by the National Centre for Student Equity and London School of Economics (Pennell, West et al. 2003; Gale, Sellar et al. 2009). The common aims and targets are: students from low SES backgrounds; offered to Year 10 students; aimed at building aspirations to attend university. The debate surrounding 'the best time to offer aspiration programs' is acknowledged however such discussion falls beyond the scope of this paper (Heckman and Rubinstein 2001; Stewart 2008).

Bradley et al. (Bradley, Noonan et al. 2008) have called for a more sophisticated approach to schools outreach and DEMO is a resource that is intended to support the next generation of schools outreach initiatives. This paper explores the retrospective and practical application of DEMO to evaluate a schools outreach initiative and a reflection of the presenters experience of the model.

In recognition that the success of schools outreach depends on long-term commitment to delivery, evaluation of effectiveness and improvement, an ongoing action research methodology supports the Yr10CR program and is described in the next section (Ramsay, Tranter et al. 1998). Results of two deliveries of Yr10CE and supporting matrices are presented in the following results section. DEMO has proven to be a useful evaluative

instrument in the reflection phase of this action research. The matrix provides an opportunity to structure intangible concepts and thus strengthens evaluations of current and future outreach programs.

Method

An action research methodology is used for this collaborative schools outreach program with action research cycles of planning, acting, observing and reflecting (Elliott 1991; Zuber-Skerrit 1991; Stringer 2007). There are many definitions for action research as explored by Masters (Masters 1995) and within these definitions emerge four themes which assisted in both building the essential partnership between UOW and DET staff and providing a research framework for the development of the Yr10CE program.

The four action research themes of: empowerment of participants; collaboration through participation; acquisition of knowledge and social change facilitated the development, evaluation and improvement of the Yr10CE program.

The Yr10CE program was designed to target Year 10 students, offer them on-campus University experiences and establish ongoing partnerships between the University and local PSP schools.

The first version of the Yr10CE program was offered in 2008 to 6 schools in the Illawarra region of the NSW South Coast. This initial program was primarily planned by UOW staff. Parents and teachers were invited to accompany students, presentations were made by experienced high school teachers and the participants were largely confined to one building on the main UOW campus at Wollongong. School and University staff observed the student participants throughout the day and also collected qualitative feedback from students and DET staff. During the reflection phase thoughtful, frank discussions were undertaken by University and DET staff. The outcomes of the first Yr10CE program are described in the results below.

The outcomes and feedback from this initial Yr10CE program were collected through focus groups and qualitative surveys and were used as inputs to the next cycle of the action research spiral. The aims of the program were revisited and key improvements were noted in the following areas: the levels of student engagement with program material; connectedness to the physical space on campus; connectedness to the Faculties and Student Services offered by UOW and enhancing student's sense of belonging on campus.

The second version of the Yr10CE program was offered in 2009 to 8 schools in the Shoalhaven and Illawarra regions. The outcomes of this delivery are also described in the results below.

Continuing with the action research methodology the DEMO has been used as an evaluation instrument in the most recent reflecting phase. It has been suggested that routine and rigorous evaluation of outreach programs is an area that could be improved (Gale, Sellar et al. 2009). DEMO has been used to retrospectively evaluate both the first and second versions of the Yr10CE program. The retrospective evaluation of the Yr10CE outreach program was conducted by the authors who are members of the Academic Service Division at the

University of Wollongong, following the guidelines published by the National Centre for Student Equity (Gale, Sellar et al. 2009).

Using the action research methodology, it was also identified that more robust student attendance data was to be captured to ultimately contribute to longitudinal studies to inform the debate regarding effectiveness of this type of aspiration outreach program.

The results section below presents: (1) feedback from the two deliveries of Yr10CE and (2) a completed Design and Evaluation Matrix for Outreach (DEMO) for the program composition of each delivery of the program.

Results

Yr10CE - version 1

The first Yr10CE Workshop was offered in 2008 with the aim of study skills development for Year 10 students from local high schools in the NSW Department of Education's Priority Schools Program. The first Yr10CE was devised with the clear objective of enhancing the academic curriculum for the student participants, by providing them with a range of study skills that would assist them in their education. The first Yr10CE was a two day workshop conducted after the Year 10 students completed their school certificate. A total of 115 students from the 6 local PSP high schools attended the initiative accompanied by their teachers and parents/guardians.

The two day workshop involved a range of activities which included: preparing students for Year 11 and 12; academic skills required for senior study; goal setting sessions; information about student support; discussions about alternative entry pathways and presentations and campus tours offered by current UOW students. These activities were supported by school teachers, HSC examiners, UOW Academic staff and student representatives.

Design and evaluation matrix for Yr10CE- version 1

The design and evaluation matrix for the first Yr10CE has been developed using the four strategies and 10 characteristics proposed in the initial DEEWR report, as illustrated in Table 1. The evaluation of this program leads to recognition of the DEMO characteristics that are included in the program composition, as highlighted in Table 1. This evaluation was undertaken by the Program Coordinator in collaboration with an independent business analyst.

Assembling Resources	Engaging Learners	Working Together	Building Confidence
People-rich	Recognition of Difference	Collaboration	Communication and information
Financial Support and/or incentives	Enhanced Academic Curriculum	Cohort Based	Familiarisation/site experiences
Early, Long Term, Sustained	Research Driven		

Table 1: DEMO - Yr10CE Version 1

Three of the broad strategies were included to varying extents in the composition of this program and a total of five of the suggested characteristics are met. The purpose of the two

highlight colours is to indicate the extent to which the characteristic is addressed via the program. This was achieved through referring to the descriptors outlined in the DEEWR commissioned report and evaluating to what extent the initial program met those descriptors. The blue indicates characteristics that were well addressed and the orange indicates a lesser engagement of the characteristic. The discussion section below considers this arrangement further as it is not included in the original matrix proposal.

Each of the characteristics present in the first Yr10CE program is briefly considered in Table 2.

Strategy	**Characteristic**	**Evaluation in Yr10CE Version 1**
Assembling Resources	People-rich	Human resources committed by both UOW and DET including: 2 HSC examiners, a school teacher from each of the six schools, 8 UOW administrative staff and 4 UOW students in the planning and implementation of the program. The large involvement in the workshop of HSC examiners and school teachers limited the connections that were able to be forged with University staff and more importantly University students and the Year 10 students. This highlighted a need for stronger and ongoing relationships to be established between young people to offer them guidance which relates to their situation.
	Financial Support and/or incentives	The workshop was offered at no expense to the Year 10 participants including free transport to and from the event and lunch. This issue of access was particularly critical due to the long distances that had to be travelled by the students. This addresses the economic constraints of different cohorts, but highlights a need for other support strategies to be put in place.
Working Together	Cohort Based	Yr10CE engages student communities through a program rather than just targeting individual students. The focus of the Yr10CE Version 1, was that students were able to make connections with other students from PSP schools, who were sharing similar experiences and backgrounds.
Building Confidence	Communication and information	Workshop participants were presented with information regarding admission options, early entry, scholarships and financial support. In addition valuable information was offered by current University students in an attempt to provide a holistic view of University life. Ongoing communications with the students after these workshops is an important aspect in continuing such dialogue. Further, the informative rather than interactive nature of the workshops was a limitation in engaging the students.
	Familiarisation/site experiences	The workshop was largely held in the University Function Centre with Campus Tours on offer to the students. Feedback from the students indicated that more engagement with the University facilities was needed to enhance the program, and ongoing site experiences would provide them with a better indication of what it is like to be a university student in this context.

Table 2: Characteristics apparent in Yr10CE Version 1

Feedback from students, DET representatives and school teachers

Qualitative data was gathered via a feedback survey from the Year 10 participants and a focus group held with DET representatives and school teachers. From this feedback three issues emerged, which included the study skills component of the workshop, the length and ongoing communication with the students.

The feedback indicated that the study skills components of the workshop were not engaging and students highlighted a needed for further familiarisation with the University facilities. The teachers and DET representatives provided feedback through focus groups, using structured questions on the content of the workshop. They indicated a desire to have involvement in determining the content of the workshop. Feedback suggested that the study skills section be disregarded, as staff felt the students did not get a lot out of this activity.

An important suggestion was that the workshop be condensed into one day, considering the removal of the study skills section and the considerable number of time commitments placed on students at this time of year. It was proposed by the school representatives that future study skills workshops could be conducted by University students in schools along with motivational speakers.

School representatives also suggested that ongoing communication needs to be improved with those students who participated in the workshop.

Year10CE - Version 2

As outlined in the methodology above, the outcomes from the first delivery of Year10CE were considered in the planning for the second delivery and Yr10CE ran again in 2009 with some significant changes which are reflected in the matrix below.

The Yr10CE was delivered in 2009 with the clear objective of raising aspirations of students from the local Priority Funded High Schools in the Illawarra and Shoalhaven regions. The workshop was condensed to one day and was run in November, after the Year 10 students completed their NSW School Certificate. 210 students from eight PSP high schools from the Illawarra and Shoalhaven regions attended with their teachers.

An engaging range of activities were offered including: orienteering activities whereby students had to engage with University support services, Faculty based taster sessions, information about support and alternative entry paths as well as presentations by UOW University students. The current UOW students shared their personal accounts of their University experiences. Such activities were designed in collaboration with the school representatives and representatives from the NSW Department of Education. Further, a wide range of University staff, Faculty Stakeholders and University students were involved in engaging with the Year 10 students and delivering the activities.

In terms of the DEMO instrument a broader range of strategies were included with greater program depth as evidenced through the increased number of highlighted characteristics in Table 3. When considering the number of characteristics (9) and strategies (4) the revised Yr10CE should be a very strong program based on program composition.

Assembling Resources	Engaging Learners	Working Together	Building Confidence
People-rich	Recognition of Difference	Collaboration	Communication and information
Financial Support and/or incentives	Enhanced Academic Curriculum	Cohort Based	Familiarisation/site experiences
Early, Long Term, Sustained	Research Driven		

Table 3: Characteristics apparent in Yr10CE Version 2

Each of the revised or new characteristics present in the second Yr10CE program is briefly considered in Table 4. Where a characteristic is largely unchanged between the first and second versions of Yr10CE it has been omitted from Table 4, refer to Table 2 for evaluation.

Strategy	Characteristic	Evaluation in Yr10CE Version 2
Assembling Resources	People-rich	Emphasis was placed on making connections between PSP school students and University students who have shared a similar background. This was done by having University students mentor groups of students throughout the day and shared engagement with the activities available on the day. Importance was placed on the University students interweaving their own University experiences with the activities that were presented to the school students. The same University students were utilised in a Tutor Assistant Program for Year 11 students from the same schools in the following year, to build upon the relationships that were established at the Yr10CE to offer them guidance which relates to their situation.
Engaging Learners	Recognition of difference	In recognition of the range of knowledge and diverse experiences students bring to formal education, students were given the opportunity to choose a Faculty that most interested them to engage in a 'taster session'. In this interactive taster session the students were able to bring a range of knowledge to the program that could be shared with other students.
	Research driven	The revised program considers broader programs and their effects. This was achieved through a scoping exercise was conducted across literature and practical applications of that research at other universities to ensure a proactive approach to schools outreach.
Working Together	Collaboration	Collaboration between the school representatives, the DET and University staff in developing the program was crucial in ensuring that it appealed to the students. Collaboration from Faculty and department stakeholders at an institutional level also ensured the program's development and a systemic and holistic approach to outreach.
	Cohort Based	Yr10CE engages student communities through a program rather than just targeting individual students. The Yr10CE drew Year 10 students from across the Illawarra region together which informed a larger community of shared experiences. Students consistently commented in the feedback that one of the things they most enjoyed about

		the day was the new people they got to meet.
Building Confidence	Communication and information	Workshop participants were presented with information regarding admission options, early entry, scholarships and financial support. In addition valuable information was offered by current University students in an attempt to provide a holistic view of University life. This was conveyed in a practical and interactive way through orienteering, faculty based taster sessions and Q & A with University students. Ongoing communications with the students after these workshops is an important aspect in continuing such dialogue and an Outreach newsletter was developed and sent out quarterly to students who attended the Yr10CE updating them with any additional university related information
	Familiarisation/site experiences	The orienteering aspects of the program encouraged engagement with the University facilities and a taste of what it is like to be a university student in this context. Some of the feedback offered by the students when asked what they most liked about the day included: *"Seeing the campus and learning what university is like for people already here" and "To see what the University looked like and talk to university students".*

Table 4: Characteristics apparent in Yr10CE Version 2

Feedback from students and DET school representatives.

Qualitative data was again gathered via a feedback survey from 78% of the 211 participating Year 10 students.

In response to questions about 'what they most liked' about the Yr10CE program many students made positive comments:

- *"Being able to talk to University students who have the same interests as me"*
- *"The way the University students answered any questions that I had in a way that was easy to understand and that they expressed their opinions*" and
- "*The different opinions and advice provided by the University students".*

The Year 10 participants consistently comment on how engaging the activities were and that they were able to find out information and further explore a field they were interested in.

A teacher from a participating High School commented:

"Just a short note to say congratulations to you and the staff, and the memorable students of UOW, for a terrific day for Year 10 yesterday. I had numerous positive conversations on the long bus trip home, but an outstanding day for our students. The biggest barrier they face from here (rural and remote, no public transport) is the 'I can't imagine myself at uni' barrier. The events yesterday have removed that barrier permanently. Other barriers remain for our students, but these can be de-constructed with their own hands and minds. A big thank you to the enthusiastic and caring band of your students for giving the students much needed exposure to the dimensions of the real world. Please pass on my thanks and congratulations to all concerned, especially to the campus leadership for their investment into local students."

Year 10 students consistently commented that the most rewarding aspect of the day was:
"Learning about all the possibilities and opportunities available when going to University."

Discussion

The Design and Evaluation Matrix for Outreach suggests effective programs are those that have at least five characteristics, three strategies and two perspectives (Gale, Sellar et al. 2009). The revised Yr10CE program was, according to the DEMO criteria, a strongly composed program with a depth of character and a broad strategic approach. The first Yr10CE program incorporated fewer strategies and characteristics tending to be a less effective program. The qualitative feedback from participants and partners tends to re-enforce the DEMO evaluation of each Yr10CE program.

The DEMO matrix and its application to the Yr10CE program demonstrates a practical application of a tool in informing the review process of a schools outreach program. The DEMO matrix was useful in that it allowed for reflection across a broad range of activities. The limitations and issues that the DEMO matrix raised in this particular paper are discussed.

The two colour classification of characteristics was adopted in this research in an attempt to indicate the extent a characteristic was achieved. This refinement allowed a more sensitive evaluation of each characteristic and proved a useful discussion point for the coordinator and business analyst.

The guidelines supporting use of the DEMO indicate that there is no inherent hierarchy of relative importance in characteristics. Local implementation may require greater emphasis on particular characteristics. For example, the participants in the first Yr10CE suggested a greater emphasis on the Familiarisation/site experiences characteristic. The delivery of the second Yr10CE 'boosted' this characteristic via the orienteering activity around the campus - excellent feedback was received surrounding this aspect of the program.

Matrices are used elsewhere to evaluate complex issues. The system analysis and design domain makes use of similar matrices to evaluate the many intangible aspects of potential or existing information systems (Satzinger 2009). Each system characteristic is given a weighting to indicate relative importance in the required information system. Teams of system users and technical staff allocate a metric to indicate the level of satisfaction with each characteristic. This metric is multiplied by the weighting to give each characteristic a numeric value. These values are summed to arrive at a single metric for the potential system – this allows comparison with other system options which have been evaluated in a similar manner. Future enhancements to the initial DEMO may benefit from applying locally appropriate weightings to characteristics. Australian social inclusion principles call for using 'locational approaches' and applying weightings to DEMO characteristics may assist in such 'local' adaption (ASIB 2009).

Effective use of DEMO required ongoing consultation with the support documents and requires commitment from the matrix evaluators to determine the 'fit' of the studied program with the matrix. Discussion about the Yr10CE outreach strategies/characteristics between facilitators and business analysis staff was enhanced with the matrix as a reference tool. Without full commitment from those using DEMO there is the risk that its use becomes a

‘box-ticking-exercise’. It is hoped that in the reflecting phase of the next iteration of Yr10CE other stakeholders will be interested in DEMO evaluation.

The likely effectiveness of a program is impacted by both the composition of the program and the programs equity orientation (Gale, Sellar et al. 2009). Three perspectives on equity orientation are proposed including: unsettling deficit views; researching ‘local knowledge’ and negotiating local interventions and building capacity in communities, schools and universities.

The outreach examples considered here resulted from an Institutional commitment to tackling equity issues in partnership with local stakeholders. The Yr10CE programs considered here are components of a broader outreach agenda at UOW. It is clear that these Yr10CE initiatives were developed for the local NSW South Coast community. The ongoing involvement of the UOW Yr10CE mentors with school based capacity building in 2010 is also an indicator of strong equity orientation. The equity orientation criteria also exist alongside the improved program composition described here.

It is interesting to note that Gale et al (Gale, Sellar et al. 2009) discourage the arrangement of the equity perspectives into a hierarchy then go on to suggest that ‘ unsettling deficit views’ may be considered a stronger perspective. Future research may investigate the relative importance of each of these equity perspectives and also investigate the use of DEMO in a more prospective manner - assisting in design of future outreach programs.

Conclusion

The qualitative feedback received following the delivery of this strongly composed program tends to indicate that the second Yr10CE was well received and more effective than the first version in raising student aspiration. The reflection phase of the action research methodology was an appropriate opportunity to conduct retrospective evaluation with the recently proposed design and evaluation matrix for university outreach to schools. The design and evaluation matrix has been useful in more rigorous evaluation of outreach program effectiveness.

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