

RESEARCH READY PROGRAM: A FIRST IN REGIONAL SOUTH AUSTRALIA

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ABSTRACT

In response to the South Australian Certificate of Education (SACE) Board's introduction in 2010 of the new Research Project subject, the University of South Australia's Centre for Participation and Community Engagement took the opportunity to engage further with school students by organising the Research Ready Program. The adoption of the program for local Year 11 government high school students by the University's Centre for Regional Engagement at Whyalla is the focus of this paper. The program, consisting of seven sessions spread across two school terms aimed to assist students identify a research topic and develop their research project, learn about the research process, support professional development of school staff and enhance school students' aspirations and pathways to university.

The paper explores the learning that transpired in order to meet the educational needs of high school students embarking on this new subject and discusses the reflections of participating university academic staff and school teachers. Questionnaire responses by participating students showed that they rated the program as 'good' to 'excellent' and believed that it would help them to complete their research projects successfully. The impact of the program on students' aspirations to pursue university studies, and the implications for a regional university campus and its community, are also examined.

INTRODUCTION

The Bradley Review of Australian Higher Education, which was reported recently (Department of Education, Employment and Workplace Relations [DEEWR], 2008), and expressed concern for inequality in higher education. It was found that participation in education leading to a qualification was declining within regional Australia. According to DEEWR (2009), the enrolment of students from regional areas declined from 19.0% (2001) to 17.8% (2008). The already low enrolment of students from remote areas further declined from 1.4% (2001) to 1.1% (2008). Highlighting the growing difference in higher education participation between urban and regional areas, the Bradley Review (2008) stressed the need for regional students to have the same rate of access to and completion of higher education degrees as their metropolitan counterparts. Recommendations as to how equality may be achieved include a number of suggestions, the most feasible one being, from

the university's perspective, through local solutions and a range of partnerships with other providers of education (DEEWR, 2008, 2009).

The Centre for Regional Engagement (CRE), University of South Australia (UniSA) at Whyalla, has been mobilising personnel and other resources to create various partnerships with other education providers such as local high schools, training and further education (TAFE) college, and potential employers, such as OneSteel, in order to increase university uptake by regional school students. The CRE has adopted a partnership strategy by undertaking outreach programs such as the 'Year 10 university experience', 'How science is utilised by health professionals', 'Nursing career expositions', 'First-generation UniReady Program', and the 'Research Ready Program', the latter being the focus of this paper.

Our purpose is to discuss the most recent collaboration initiated by the CRE that responds to the challenge posed by the Bradley Review on providing regional high school students with the same rate of access to and completion of university studies as metropolitan students. The Research Ready Program is an innovative and responsive initiative that aims to assist students develop a research project, assist school staff in delivering the Research Project subject, and enhance school students' aspirations and pathways to university. In partnering with the school and students in this Research Ready Program, the CRE is not only assisting students in planning for their Year 12 Research Project subject, but is also increasing students' awareness by triggering their interest in university study and enhancing their aspirations.

This paper offers an insight to the South Australian Certificate of Education (SACE) Research Project introduced in 2010 by SA Education Department and the Research Ready Program conducted in a regional community. The written evaluation of the program by participating students is emphasised, as well as the critical reflections of the teacher and university academic staff on the value of engaging high school students in the Research Ready Program.

BACKGROUND

The word 'research' refers to a 'rigorous process of inquiry to provide answers to questions (Daly, Elliot & Chang, 2010, p. 129). It is a complex subject involving many well-established investigative traditions. Research is extremely useful for various occupations; some of these uses include testing known knowledge, increasing the body of knowledge, widening understanding of a topic, explaining and predicting behaviours, and developing best practice (Daly, Elliot & Chang, 2010). Research is 'used broadly and may include practical or technical investigations, formal research, or exploratory inquiries' (SACE Board of South Australia, 2010, p. 1). As research findings are sources of information, being able to read, understand, analyse and critique information in research is now part of demonstrating information literacy (Chartered Institute of Library and Information Professionals (CILIP), 2010). CILIP (2010) defines information literacy as being able to identify one's need of information, how and where one might acquire this information, and how to

evaluate and use the information. The SACE Board recognises the importance and relevance of research and developing research skills amongst high school students, which is why it has included a subject called the Research Project in Year 12.

Of the many theories available in teaching research to school students, the problem-based approach is preferred by the university staff running the Research Ready program. Problem-based learning (PBL) is an 'inquiry process that resolves questions, curiosities, doubts, and uncertainties about complex phenomena in life' (Barell, 2007, p. 3) and a problem is anything that requires some solution. PBL is an appropriate pedagogy for our purpose because it calls for higher level of information processing including inquiry strategies, critical thinking, problem solving, and reflection. After the students identify a research question, PBL strategies are employed to guide them to think about what is already known about their topic, what is it exactly they wish to find out, how and where to find the answers, what do they expect to learn, how might they apply what they learned, and new queries arising from their research (Barell, 2007).

The SACE subject Research Project aims to provide students the opportunity to study an area of interest in depth. Students use their creativity and initiative while developing research and presentation skills needed in further study or work. In this subject, Year 12 students choose their topics of interest, learn and apply research processes to their specific topics, record their research, and evaluate the learning that took place (SACE Board of South Australia, 2010). The content of the subject consists of capabilities and research framework. Students develop the following capabilities: learning, communication, citizenship and personal development. They also become cognizant of the research framework, initiating and planning research, carrying out the research, producing the research outcome, and evaluating the research.

The UniSA's Centre for Participation and Community Engagement took the opportunity to engage further with school students by organising the Research Ready Program. The program was adopted by CRE and offered to local Year 11 students to help them prepare for the subject Research Project in Year 12. Under the leadership of the CRE Dean of Teaching and Learning (Author 2), a local Research Ready Program was developed, following the First-generation UniReady Orientation Program conducted previously for Year 10 local high school students. The objectives of the latter program include orientation to university, enhancing students' aspirations to university, assisting students in planning for their future and identifying goals to achieve this future, and more specifically, to assist in developing students' Personal Learning Plans, a ten-credit SACE subject which focuses on career planning. The progression from orientation to learning about research in the university was deemed ideal in providing cultural participation, university exposure and experience, which might influence students making decisions about university studies and career options. There is a real need to engage with school students over a number of years in order to make an impact on them.

THE RESEARCH READY PROGRAM

The geographic location of the regional 2010 Research Ready Program was at the Centre for Regional Engagement (CRE) at Whyalla, the only regional campus of the University of South Australia. Whyalla, about 400 kilometres north-west of Adelaide, the capital of South Australia, is called 'Education City' because of the university campus, TAFE SA, Whyalla Campus, and government and non-government primary and secondary schools (Corporation of the City of Whyalla, 2010) has a population of approximately 23,000 (Australian Bureau of Statistics, 2010). About 30% of the population are in the school age. The major local employer is OneSteel Whyalla Steelworks. There are three schools offering secondary education, the inaugural Research Ready Program involved the only government school offering Year 11 and Year 12 in Whyalla.

An expression of interest from the school principal was sought at the beginning of the year. Following this, a memorandum of agreement was signed. Written information letters were sent to parents and school students through the principal. Parents of interested students were asked to sign and return consent forms. From the SA state government grant of \$65,000, the university allocated some funds to the CRE to implement the Whyalla Research Ready program.

Staff appropriate for the program were identified and organised. The CRE staff recruited to participate in the program included the Librarian, research-active faculty members and administrative staff to handle organisational issues. The objectives of the program, roles and actual involvement of staff were clarified. The social work honours students were invited to act as mentors for the high school students participating in the Research Ready Program. The local Year 11 students were accompanied on campus by the school Research Project Coordinator, who worked very closely with the academic staff at the university in designing and delivering the program.

The program was offered for seven weeks, spread over two terms. The highlight of the first session was the introduction of students to the wealth of library resources the campus has to offer its students. Identifying a research topic that was interesting and meaningful for the students was the focus of the second session, which outlined study skills appropriate to research also. Students learnt about the research process during the third session, and were excited about navigating around different databases in search of articles about their chosen topics. The fourth session was a lecture on research methods, analysis and reflective writing. Sessions 5 (Open Day) and 6 provided opportunities for students to learn about the university, specifically the research projects being conducted by academics at the university campus. Following each session, students were required to continue working on their projects at school. The final session was devoted to student presentations where students demonstrated their progress in their research projects through a presentation to the group. They were requested to participate in an evaluation of the program by answering close- and open-ended questions pertaining to their experience at the

university while learning about research. The program concluded with a celebration, awarding of certificates and a pizza lunch.

Evaluation of the Program

A survey approach included a questionnaire to collect data (de Vaus, 1991), specifically to determine the perceptions of school students about the Research Ready Program. A 26-item questionnaire was administered covering demographics (Questions 1-3), ratings of sessions (Questions 4-10), awareness of the SACE subject Research Project (Question 11), assistance in undertaking the subject Research Project (Question 12), favourite part of the program and why (Question 23), least favourite part of the program and why (Question 24), how to improve the program (Question 25), including other suggestions about the program (Question 26).

Other pertinent questions relating to university aspirations were included in the questionnaire. Questions on intentions to go to university (Question 13), likelihood of going to university (Question 14), impact of the Research Ready Program on pursuing university (Question 15), 3 things that would encourage university enrolment (Question 16), 3 barriers to going to university (Question 17), cost per year of attending university (Question 18), help available to pay for university (Question 20), future vocational aspirations after school or further study (Question 21), and way to obtain this job (Question 22).

Critical reflection was used to determine the impact of the program from the perspective of school teachers and university staff. Critical reflection refers to going back over something for the purpose of making sense of the situation, self-correction and continuous improvement (Usher & Holmes, 2010). In critically reflecting on the importance and relevance of the program, the key outcome is action that may take many forms to improve this initiative. Other sources of program evaluation were the weekly reflections of students and the exemplars students presented at the conclusion of the program.

Results

There were eight (8) students who completed the Research Ready Program of the 15 students who attended the first session. Their research interests varied from radio broadcasting, veterinary science, cricket umpiring, evolution of clowns, desalination plant to drug use. Although a small sample of students completed this program, it will pave the way for more students to engage in the Research Ready Program in the future. Statistics show that many students at the school drop-out before completing the Year 12 certificate and very few students access university education. These students are the potential first generation in their families to enter university.

Below are tables summarising the results of the student sample that completed the 26-item post-program questionnaire. Of the eight (8) students who completed the program, seven (7) completed and returned the questionnaire.

Table 1. Summary of ratings of program sessions

Questions	Responses	Other comments
Rating of introductory session	Good to excellent (many 2s)	1-7 (1 excellent, 4 good, 7 not useful)
Study skills for research	Good (many 3s)	
Research process	Good to excellent (many 2s)	
Research analysis and writing	Good (many 3s)	
Open day	The majority did not attend, as they previously participated in orientation to the campus	
Discipline research presentations	Good (many 4s)	
Research report back, celebration	Excellent (many 1s)	
Awareness of SACE Research Project	Aware (many 3s)	1-7 (1 fully aware, 7 no knowledge)

Table 2. Impact on the Research Project

Did the Research Ready Program help you undertake the Research Project, why or why not?
<p>Yes, because of the head start.</p> <p>I believe this program has helped because it gave me a better understanding on what is needed to be done.</p> <p>Through the help, I'm able to better my question.</p> <p>Yes, because of the constructive criticism from mentors.</p> <p>Yes, a lot, I now have my question. I also have a fair bit of information.</p> <p>Yes. Because it has helped me understand how to meet the requirements.</p> <p>One did not answer this question.</p>

Table 3. Favourite part of the program

What is your favourite part of the program and why?
<p>Group activities with the people of the program.</p> <p>Getting together as a group and helping each other out.</p> <p>Learning how to refine question and research more effectively.</p> <p>The closeness and small groups.</p> <p>I liked the group discussions.</p> <p>Small group working together with more teacher help.</p> <p>Learning new skills.</p>

Table 4. Least favourite part of the program

What is your least favourite part of the program and why?
Difficult computers Discussing my question and PowerPoint as I don't particularly like public speaking. Not a lot of specific focuses on radio. The 6 th session because it was boring. Nothing it was all helpful. The 6 th session. I didn't like the people talking for the whole time. When the computers didn't work. Nothing.

Table 5. Areas for improvement

How could the program be improved?
Not so long between sessions Library cards, more sessions. Library cards! I think it's already good. More sessions/lessons. I liked it. Access to library (library cards).

Table 6. Additional comments

Other ideas about the program?
The program was good. Thanks for the effort. Taught me a lot about questioning and researching. Not really. No, thanks. No. The program is good the way it is. Two did not answer this item.

Perceptions about the Program

Student perceptions about the sessions varied to some degree; however, all sessions were rated from 'good' to 'excellent'. The majority (6 out of 7) of students agreed that the Research Ready Program would help them undertake their research projects in Year 12. Five (5) stated that they were 'more likely' to attend university as a result of the program, while three said 'the same'. The favourite parts of the program were the 'closeness and small groups', 'group discussions', 'how to refine the question and research more effectively', 'group activities', 'small group working together with more teacher help', 'learning new skills', 'getting together as a group and helping each other'. The least favourite were: 'public speaking', 'talking', 'difficulty with computers', and 'not having access to library cards'. Overall, the students found the program to be satisfactory and three students wanted to attend more sessions. It is noteworthy to mention that the small number of students who attended this program came from a school where previously, only a few students had aspired to university education.

Perceptions about University

The majority of the students said that they were 'more likely' to go to university to pursue goals, and these goals varied from wanting to 'learn more', 'study social work or environmental science or junior primary teacher', to 'get a better job'. Many aspects would facilitate their decision to go to university, including 'better career', 'new experiences', 'opportunity to travel', 'I want to be a social worker', 'make money', 'having the course offered locally', 'scholarships', 'friends I could make.', and 'I need it for a job.' Barriers to going to university were indicated as 'money', 'cost', 'failing Year 12', 'ATAR score', 'work ethic', 'leaving hometown', 'no place to stay' and 'not motivated'.

Teacher's Reflection

The Research Project Coordinator recorded her reflections about the Research Ready Program illustrating that *'students actively participated in all sessions and have refined a suitable topic question for further study next year. Most students have collected relevant data and are in the process of evaluating this for transfer into an appropriate form for the research outcome. Many students had not undertaken research to this extent prior to the program and found that the sessions on 'using search engines successfully' and 'ethical considerations for research' were 'useful' and 'enjoyable'.*

At the beginning of program one student was reluctant to participate in open discussions. Throughout the program it was observed that, with the support and prompting from staff and mentors, he became more actively involved, providing more in-depth responses. By the end of the program, the student confidently prepared and delivered a short presentation about his research and accepted questions, and constructive feedback, in a positive manner.

University Staff Reflection

One of the academic staff in the Research Ready Program wrote the following reflection:

'similar to the First-generation UniReady Program, the most important accomplishment for staff in this program is to help students believe in themselves, that research skills can be learnt, and that entry and completion of university is achievable for them. It is important to maintain this program because it is an opportunity for the university to engage with the community and build partnerships with regional schools and students.'

DISCUSSION

The results of the survey indicate that the Research Ready Program was important and relevant to Year 11 school students planning to enrol in the subject Research Project in Year 12. The students were overwhelmingly positive about the program, relating to the capabilities developed as well as the learning gained on the research framework. The capabilities involved locating, analysing and using information, interaction with teachers, mentors and co-students, asking questions, taking different perspectives into consideration, using clear language to communicate, considering issues important to the community and building self-confidence and personal development. The research framework was clarified and students demonstrated specific research skills including developing and exploring ideas, identifying a research topic, formulating focusing research questions, considering ethical issues surrounding research, investigating literature, planning a research method and analysis, reflecting on understanding and producing a distinct individual outcome in the form of a power point presentation summarising their achievements in their individual research.

The students were better prepared to grasp research concepts and processes, preparing them for the SACE Year 12 Research Project. This program stands to potentially boost the students SACE subject outcomes. The Research Ready Program demystified research, clarified and facilitated the meeting of the requirements of the subject, and increased students' confidence in conducting research. The students learnt how to be reflective as they wrote their weekly reflections on the understanding of research, its usefulness and relevance to the community and to themselves. The favourite part of the program was the group activities, indicating the value students placed in psychosocial aspects of groups – building relationships, discussions, closeness and working and learning together. This aspect will be emphasised further in future programs.

All participants benefited from participating in the program including the benefits gained by the participating Year 11 students, as well as the university students who acted as mentors. The two mentors who acted as role models and shared students' language honed their mentoring skills while supporting Year 11 students' learning.

The school teacher profited by attending workshops and professional development sessions held in the capital city while taking the opportunity to network with other teachers who were involved in the Research Ready Program from the city schools. As gleaned from her reflections, at least one student became transformed and motivated to develop a good research project.

The importance of the program beyond those concerned with the SACE is elucidated for the benefit of other universities which might be involved in a similar initiative. The program provided mutual benefits to the university and these included: greater awareness and presence of the regional campus and its activities and services; promotion of undergraduate programs; enhanced personal and professional development for university staff; and increased staff morale and productivity. The academic staff members were able to share their research activities at the same time providing the students with a taste of university life. It was extremely satisfying for all who participated, receiving acknowledgement from the high school students and their parents in the community. More important is the opportunity to extend school-university partnerships and strengthen positive school-university interactions, vital if universities aim to be successful in increasing regional students participation in higher education. There is a need to look beyond the current structures of provision for models of schooling to better address the issue of university participation, and the Research Ready program has the potential to achieve this purpose.

On completion of the program, five students stated that they were 'more likely' to attend university as a result of the program, signifying students' changing attitude about university education. They determined that it was a plausible aspiration for them after high school, and that university was an attainable goal. With this result, it is safe to conclude that the program influenced the students' university aspirations, assisted the students to identify future goals and identified the university as a means of achieving those goals. Three other students indicated 'the same', meaning that they had thought about university studies prior to participating in the program. This finding indicated to the program organisers the need to engage with high school students prior to Year 11, as they would have made decisions about post-secondary education well before then (Alfonso, 2010).

In order to reduce attrition in the program we plan to better prepare students by giving presentations at the school about the SACE Research Ready subject and the university's commitment to assisting high students to learn about research who will be taking this subject in the following year. We also anticipate in hosting an event for parents, students as well as teachers at the university campus to learn more about the program and the resources that will benefit students taking the Research Project SACE subject in the future. We plan to provide university library access cards to high school students, ensuring that they are able to use resources for completing their projects. The oral presentation was stressful for some students and ways by which this might be delivered in a less-threatening manner will be explored. A follow-up on students' performance in the Research Project subject during 2011 will be made in order to determine their success or difficulty in the subject. It is

important to invest in a dedicated academic faculty member to oversee the program at the university.

CONCLUSION

The Research Ready Program initiated by UniSA was adopted by the CRE for rural Year 11 students enrolled at a government senior high school. The eight (8) students who completed the program stated that the program was satisfactory in content and delivery, was valuable for their learning, and would help them in the Year 12 Research Ready SACE subject. Moreover, the program enhanced students' aspirations and knowledge of pathways to university, stating that they were likely to pursue university studies. At the same time, the university profited from hosting the program.

The Research Ready Program is a purposeful, strategic, innovative program that provides opportunities for achieving developmental outcomes relating to the broad areas of research, self-understanding, social relationships, skill building and goal planning. It is important for the university to build connections and maintain partnerships at multiple levels with secondary schools to meet the educational needs of school students, and to be part of the community. In partnerships, both school and university share the same vision and purpose, agree to collaborate, and share resources and benefits of the collaboration (Community Campus Partnerships for Health, 2011). It is a win-win situation for all involved.

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