

## EDUCATION

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### Embedding Information Literacy into the Prehospital Care Curriculum

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#### **Keywords**

Information literacy; paramedic education programs; graduate attributes; professional development; learning outcomes.

#### **Abstract**

This paper presents a teaching and learning model applied within a first year core subject taught within the Prehospital Care course at Charles Sturt University. The aim of the model is to improve the quality of the first year student learning experience, and facilitate the development of graduate attributes that improve learning outcomes and address paramedic occupational needs. This model was the outcome of a process of critical reflection by the author and collaboration between academics, educational designers, learning skills and librarian staff at Charles Sturt University.

#### **Background**

In March 2007 the Council of Ambulance Authorities Inc. (CAA) published Guidelines for the Assessment and Accreditation of University Paramedic Programs in Australia and New Zealand. These guidelines take into account the needs of industry, the profession, universities and the community, and lay out requirements for paramedic education programs that provide graduates with workforce skills and competencies that will be necessary in meeting future community healthcare needs.<sup>1</sup>

One of the intended outcomes of the accreditation process is the development of University programs that enable graduates to develop desirable paramedic attributes that will affect professional behaviour and provide an evidence base to underpin practice now and into the future.<sup>1</sup>

The agreed attributes listed in the CAA document state that graduate paramedics should:

- Understand the role of the paramedic in the greater health and public safety system
- Operate within appropriate ethical and professional boundaries
- Value teamwork and partnerships in the delivery of emergency service and healthcare
- Consider moral, ethical, legal, social, economic, political, cultural, religious, emotional and communication aspects of care

- Provide innovation in addressing the challenging and ever-changing healthcare system, and
- Follow evidence-based practice and understand its role in paramedic healthcare delivery.<sup>1</sup>

In order to fulfil the above requirements graduate paramedics need to embrace the concept of self-directed professional development and lifelong learning. They also need to develop skills and attitudes that are congruent with critical, inquiry and evidence-based approaches to healthcare provision. The use of research, reflection and self evaluation to inform, develop and improve practice to meet community, industry, profession and healthcare team needs are also important in attaining the above goals.<sup>1</sup>

Given the requirements listed above, the challenge for universities is to find the best pathways to develop these attributes in their paramedic students. This paper discusses one such pathway - the embedding of Information Literacy (IL) into the Prehospital Care curriculum.

### **What is Information Literacy?**

The transition of IL from technical skill to graduate attribute and learning outcome mirrors the shift of this concept from the bibliographic to the educational domain.<sup>2</sup>

Initially IL was seen by librarians as the use of library resources, information and communications technology for study purposes<sup>3</sup> but now the term has spread to encompass both mechanical or internet technology skills, cognitive aspects, and the way we think and learn.<sup>4</sup> For example, Bundy describes IL as the capacity to recognise the need for information, identify, find and access the information, and then synthesise, evaluate and apply it<sup>5</sup>, while Macpherson expands IL to include critical thinking, problem-solving, and even the ability to work in teams, and undertake ethical and professional behaviour.<sup>6</sup>

The Australian and New Zealand Institute for Information Literacy (ANZIIL) conceptualises IL as an intellectual framework supported by fluency with information technology, sound investigative methods, and critical discernment and reasoning.<sup>3</sup> ANZIIL states that IL is synonymous with knowing how to learn, is a means of personal empowerment, and allows people to verify or refute expert opinion and to become independent seekers of truth.<sup>3</sup> These are all highly desirable attributes for paramedic graduates.

### **The Information Literacy Framework in Australia and New Zealand**

In 2004 ANZIIL endorsed a framework providing the principles, standards and practice to support literacy education in all sectors. The six core information literacy standards within this framework are that individuals are able to:

- Recognise the need for information and determine the nature and extent of the information needed
- Find needed information effectively and efficiently
- Critically evaluate information and the information seeking process
- Manage information collected or generated
- Apply prior and new information to construct new concepts or create new understandings
- Use information with understanding and acknowledges cultural, ethical, economic, legal, and social issues surrounding the use of information.<sup>3</sup>

The principles behind these standards are that the information literate person:

- Engages in independent learning through constructing new meaning, understanding and knowledge
- Derives satisfaction and personal fulfilment from using information wisely
- Individually and collectively searches for and uses information for decision making and problem solving in order to address personal, professional and societal issues, and
- Demonstrates social responsibility through a commitment to lifelong learning and community participation.<sup>3</sup>

The ANZIIL standards are grounded in generic skills (problem solving, collaboration and teamwork), information skills (information seeking, use and technology fluency), and values and beliefs related to using information wisely and ethically, social responsibility and community participation.<sup>3</sup>

From this perspective, IL can be seen as a process in which skills, knowledge and learning outcomes associated with an individual's educational development can contribute towards wider economic, social and cultural benefits.<sup>7</sup> The ANZIIL standards, therefore, share commonalities with the paramedic graduate attributes within the CAA document.

### **Why Information Literacy was embedded within the Paramedic curriculum at Charles Sturt University**

Charles Sturt University (CSU) offers undergraduate and post-graduate paramedic courses to both Australian and overseas students via on-campus and distance education (DE) courses coordinated from the Bathurst campus in Australia. On-campus students are comprised of school leavers and mature age students, whilst DE students are largely mature age students in full time employment with Ambulance Services or Armed Forces based in Australia and Canada. As a result, most paramedic students in the CSU undergraduate program enter with a diverse background in geographical location, age, culture, academic experience and ability.

IL was embedded into the first year Professional Studies subject taught to on-campus students in the Prehospital Care course after it was found that the traditional curriculum did not necessarily meet student demands, inform them of academic conventions, or prepare them for research, problem-solving and continuous learning. The difficulties listed above correlate with research by Gibbs, Jones, Molloy and Hamilton who found CSU attracted students from rural and remote communities, many of which were mature-aged, non-traditional learners with no family background in higher education and who felt unsure that they had the skills necessary for university study, and no clear understanding of what might be expected of them as university students.<sup>8</sup>

In line with the above findings Hartmann provides a review of several studies that reveal a gap between student and academic and librarian staff expectations in relation to what they perceive as the skills and IL standards required for university.<sup>4</sup> She and other authors point to IL courses as a solution to the problem, however mention various shortfalls in current programs including insufficient resourcing, a lack of academic-librarian collaboration, the inclusion of unnecessary information, the ad hoc nature of most programs, and confusion over the boundaries of responsibility between academics and librarians in teaching IL.<sup>5, 7, 9</sup> Taking these issues into account, a collaborative approach was taken between academic, educational design, learning skills and library staff to embed IL into a first year subject in the Prehospital Care program at CSU. The aim was to enable students to engage critically with content, extend their research skills, become more self-directed, and assume greater control over their own learning. The module was piloted with the on-campus students, and following its success, will be extended to the first year DE cohort of students.

### **Reasons why Information Literacy was ‘embedded’ into the course.**

‘Embedding’ refers to aligning IL objectives with learning outcomes of an academic course or program.<sup>2</sup> IL was embedded within a core Prehospital care subject rather than treated as an add-on or viewed as a student self-educational responsibility, as researchers have indicated students are more likely to engage and retain IL if it is embedded and contextualised.<sup>2</sup> Embedding encourages students to value the importance of generic attributes and information literacy skills in their own discipline area and see their link to educational content and professional practice. This, in turn, is motivating for students and encourages a deeper level of learning.

### **How the model is applied in the first year Paramedic subject.**

The first year Professional Studies (PHC100) subject runs across a thirteen week academic semester and consists of 4 hours of classes per week. In this subject IL tutorials aimed at teaching generic skills ranging from analysing questions, to library database searching, essay planning, conventions in academic writing and use of referencing are run for one hour per week across the first half of the teaching semester. Active participation and attendance at these classes is compulsory (value 10% of total assessment). Timely feedback and scaffolding of tasks is provided in each weekly tutorial and students are encouraged to seek help along the way with any of the tasks set. The tutorials and homework activities are supported with online forum postings and follow-up discussion in later tutorials. The weekly IL learning activities build across the first half of semester to form an IL portfolio (value 20%).

While students attend and complete their IL work, they are directed to work on a major written assessment task (major essay) which is carried out in parallel. This essay (value 25%) is handed in two weeks after students complete their portfolio. The essay topic is based on material and themes presented in lectures across the first half of semester. The IL tutorial activities and portfolio items inform the process of researching and writing the essay. The remaining marks for the subject are assessed via a final essay (value 45%) covering the remainder of the subject content. This essay is handed out mid-semester and is due at the end of the total teaching semester.

### **Feedback on the embedded Information Literacy module**

More detailed and rigorous evaluation of the value of the IL model in improving student outcomes is required. However early survey feedback from first year students indicates that the IL module represents quality teaching, stimulates learning, aids understanding, provides guidance for improved learning, and allows students to develop analytical skills.

Students report the most helpful aspects of the IL module to be in helping them with their approach, research, layout, writing and referencing of essays. The latter includes the difference between referencing at the high school and university level. The most difficult aspects are reported to be mastering the use of library databases, and correct methods in referencing. Though not fully comfortable in these areas, students indicated that having completed the IL module they would now be prepared to make better use of library resources (catalogue and databases) and seek assistance from librarians and other university staff if required.

#### *General comments from students:*

“I discovered how to research effectively and the extent of the research required”.

“As I had done previous study at university level, the information literacy module was mainly a refresher for me. It is an essential skill, however, and was beneficial.”

“Everything about this subject was great...The lectures were interesting and definitely relevant...time was given to helping us improve our writing skills etc in order to be able to successfully complete our assignments. From conversations with other students I know they felt the same about this subject.”

First year students also reported that third year students had heard about the IL module, were commenting on how useful it would have been and complaining at having not been given the module during their own first year.

*Other feedback:*

Academics not directly involved with the model, but teaching the same first year cohorts in other subjects, are reporting evidence that they can see an obvious improvement in the quality of students' written assignments.

**The future of Information Literacy in CSU Prehospital care programs**

IL is not the outcome of any one subject but the accumulative experience from a range of subjects and learning experiences.<sup>3</sup> At present IL is embedded in the first year of the CSU paramedic course and plans are in place to extend the IL model throughout the remainder of the course. After a process of ongoing evaluation and critical reflection by the author, the IL first year package will be extended to include study and learning skills which are currently taught as an add-on.

**Summary**

The CSU paramedic program aims to develop paramedic student attributes related to knowledge, skills and values that will be carried through from the tertiary to the prehospital care setting. Of particular importance is the development of students as independent learners with the ability to obtain, evaluate, synthesise and organise information, to exercise critical and reflective judgement, to communicate effectively with a wide variety of people, and to be able to develop and apply these skills in challenging and dynamic work environments. These attributes are in line with the prescribed Council of Ambulance Authorities guidelines, to which CSU aspires.

More detailed and rigorous evaluation of the value of the IL model in improving student outcomes is required. However early survey feedback from first year paramedic students suggests that the IL model is successful in assisting adult learners with their transition to University study, and that the model develops research, reflective and self-evaluative capacities and capabilities that enable students to engage in inquiry and evidence-based practice.

IL has been embedded as an integral component within the first year of the paramedic undergraduate course. The model facilitates the development of graduate attributes that aim to improve learning outcomes and address paramedic occupational needs. The practice of embedding IL will now be expanded to include learning and study skills, and these will be extended throughout the CSU undergraduate and postgraduate paramedic courses.

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