



## Students' expectations of the *Virtual Maternity Clinic*

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The aim for the *Virtual Maternity Clinic* (VMC) is to engage students in learning about the role of the midwife and care of women during early pregnancy. The VMC, using *Deakin Studies Online* as a platform, includes *LiveSim*, videoed characters and *Adobe Flash* of four pregnant women with diverse issues. From an evaluation distributed to students prior to access of the VMC to identify their expectations, we found that undergraduate students wanted to learn how to interact with women during early pregnancy, whereas postgraduate students wanted strategies to learn about midwifery practice. Further development of the VMC is progressing to include a suite of programs incorporating the care of women during late pregnancy, labour and birth; and the time after birth.

Keywords: Virtual maternity clinic, nursing, midwifery, student learning, professional learning, multimedia resources

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### Introduction

The Virtual Maternity Clinic (VMC), a project funded by the Student Teaching and Learning Grant Scheme, Deakin University, comprises of four virtual characters in early pregnancy. The project was implemented in trimester 2, 2009 for students enrolled in undergraduate and postgraduate midwifery courses. The aims of the VMC included designing a virtual learning experience to provide students with opportunities to learn about the role of the midwife in the care of women in early pregnancy and to enhance their clinical experiences in maternity services. The VMC is a clinic where women attend care conducted by the midwife and is available to students.

The VMC was developed by the Knowledge Media Division at Deakin University using software including *LiveSim* and *Adobe Flash* and consists of four video scenarios of pregnant women being interviewed. Paid actors performed these roles and the scenarios were developed by the midwifery academic members of the project team who also created the interactive learning activities related to each of the four women. An external member of the project team contributed significantly to the design of the VMC and its characters to reflect contemporary midwifery practice. The midwife avatar's role was designed to highlight woman-centred care and effective communication. The four women in the VMC have diverse health issues, such as a lack of social support and diabetes, to place emphasis on the midwife's primary health practice role. The focus of this paper is related to students' expectations of the VMC prior to its implementation.

### Background

The task of ensuring that undergraduate (Bachelor of Nursing/Bachelor of Midwifery) and postgraduate (Graduate Diploma of Midwifery) students have clinical learning opportunities in pregnancy care is a challenging one for academics. This challenge is due to the shortage of available places in practice settings as a consequence of demand from various disciplines such as medicine and allied health (i.e. paramedicine). In addition many maternity services such as private hospitals have limited pregnancy care services. This has resulted in a reduction of opportunities for midwifery students to expand their professional practice development. As a primary health practitioner the midwife is expected to engage in effective communication, recognize health issues, provide effectual and appropriate care and where

necessary refer women to other health professionals (ANMC Australian Nursing & Midwifery Council, 2006). In the VMC the role of the midwife is characterized as a primary health practitioner role encompassing a 'woman-centred' framework of individualized care (Stewart et al, 2003) and where each woman is encouraged to assume an active role in her own care.

At Deakin University existing online modalities such as *Blackboard on Deakin Studies Online* and *Illuminate Live*, (a synchronous and asynchronous computer based application), have been used in a blended approach to content delivery for undergraduate and postgraduate midwifery courses. Despite these applications, students have not developed a deep understanding of health assessments required for the care of women during early pregnancy and where midwives have an important role as primary health practitioners. These issues led to innovative teaching and learning approaches using the VLE.

Use of technological applications in nursing education according to Simpson (2006) is aimed at creating equity in learning opportunities for distance learners, while another outcome of the use of simulation technology for undergraduate students is the promotion of interactive and critical thinking (Medley & Horne, 2005). In using simulation applications the VLE becomes a vehicle to keep pace with educational changes (Chan, Corlett, Sharples, Ting & Westmancott, 2005) and support effective learning in health (Mantovani, Castelnuovo, Gaggioli & Riva, 2003) for practice based professions. Student-centred learning encourages the development of attributes such as independence, self motivation, critical analysis and reflective practice (Nagia, Hodson-Carlton & Ryan, 2004), all of which are required for professional midwifery practice.

The VMC provides a safe environment for students where they are not at risk of for example, providing inappropriate care or information to women. Further, students can refer to any of the four virtual women repeatedly if required, and at any time of their choosing to support problem based learning (PBL) (Kalyuga, 2007) and access of interactive activities (Atkinson & Renki, 2007). The VMC is therefore an invaluable resource to enhance experiential learning for students.

## Study design

Two evaluations tools were developed for the study incorporating both qualitative (interpretation) and quantitative (measurement) research designs. One tool was a pre-VMC was distributed prior to students' accessing the virtual learning environment and the second tool distributed following access to the VMC. The post evaluation of the VMC commenced the 6th October 2009.

Implementation of the VMC occurred in a sequence so that all students had access to one character at a time commencing on 31st July 2009. All virtual characters were available by 28th August 2009. The rationale for this approach included pedagogical factors such as allowing all students time to access the VMC and explore each virtual woman.

## Methodology

### Aims

The aims of the project included:

- improving learning outcomes for students to better prepare them for professional practice by the development and provision of high quality and flexible learning activities;
- assisting students in meeting the competency standards of the Australian Nursing and Midwifery Council and expectations of industry that as graduates they would be 'work ready' in their capacity to provide effective care of women during early pregnancy.

### Recruitment

Students from three campuses of Deakin University were recruited by academics (non project members) to participate in the project. They distributed and collected completed pre-VMC questionnaires and returned them to the research assistant. The return rate was n=119 out of a possible 140 students. No identifying data was requested from students and if present, were removed by the research assistant.

### Pre- VMC tool

The pre-VMC tool was developed to survey students' expectations of the VMC, access to a computer and their exposure to midwifery practice through placements at maternity services of hospitals in

metropolitan, regional and rural areas of Victoria. All students have had some exposure to online learning previously and it was of interest to the project team to determine whether or not they had expectations of the VMC. The pre VMC tool was distributed to students during the first week of trimester 2, 2009 and prior to implementation of the VMC.

## Data analysis

Participants were surveyed regarding their expectations of learning within the VMC. Findings were sorted into two initial categories: (1) their expectations of learning regarding midwifery and (2) expectations of the VMC experience itself. This paper reports on responses related to the VMC experience only. Individual phrases within participants' responses were considered as the 'meaning unit' and then coded. Coding was undertaken according to similarities and differences that were sorted into sub-categories and categories. Credibility of the qualitative data analysis was achieved by iterative coding and category determination by two coders and by the inclusion of all data relevant to the research question (Graneheim & Lundman, 2004).

## Findings

Participant's responses were initially sorted to thematically analyze their expectations of the VMC and only those related to the nature of the virtual learning experience are presented in Figure 1. Coding topics were generated using a bottom-up approach based on participant data (Miller and Fox, 2004). Three categories of participant's comments were identified pertaining to their expectations of the forms of learning that would occur in the VMC, its use and the quality of the learning experience.

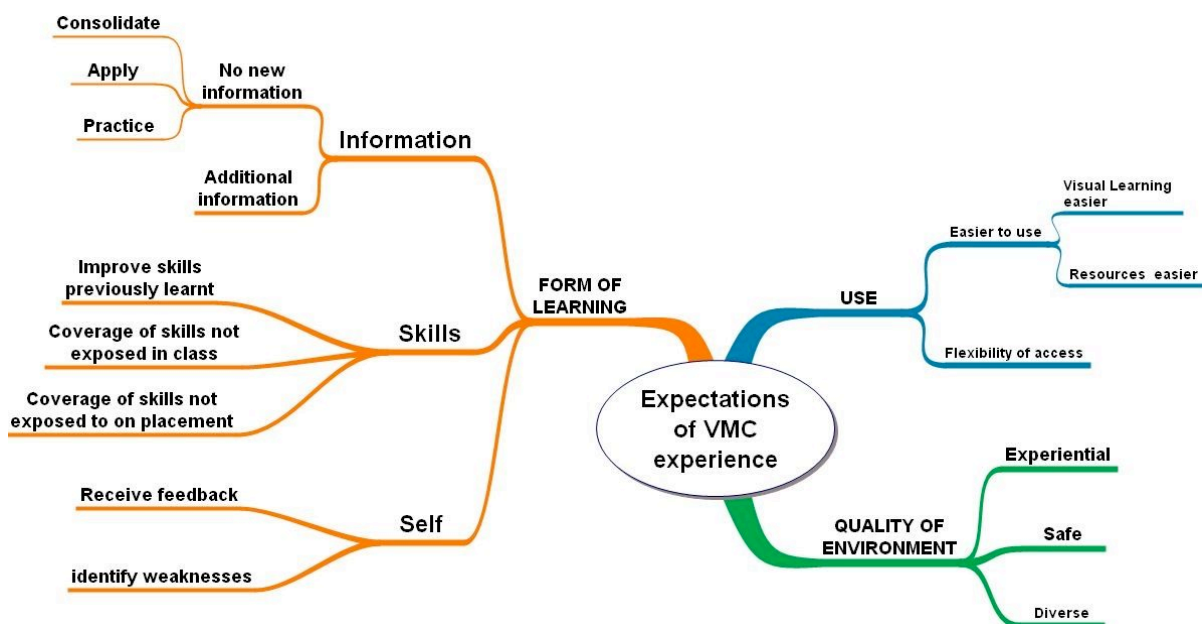


Figure1: Expectations of the VMC experience

## Thematic analysis

Participants' expectations of the form of learning constituting the VMC varied widely but all were optimistic about its possibilities in providing opportunities to support their practice development. All responses related to the quality and use of the VMC in that it would offer safe, diverse experiential learning; and that the online aspect of the VMC would provide ease and flexibility of use. Some participants indicated that they did not expect any new information from the VMC, but some did.

The first year students of the Bachelor of Nursing/Bachelor of Midwifery had not undertaken any placements in maternity services at the time of data collection for the pre-VMC questionnaire and were looking forward to observing the role of the midwife and their interactions with women later in the trimester. Both second year and third year students of this course indicated that despite their previous placements they required further resources to support their learning about the care of women during early pregnancy. The students enrolled in the Graduate Diploma of Midwifery wanted specific information

related to strategies used by midwife in the care of the woman during early pregnancy such as interview styles.

## Discussion

Students enrolled in the first year of the Bachelor of Nursing/Bachelor of Midwifery had not undertaken any placements in midwifery practice settings at the time of data collection but will do so towards to the end of the trimester. The second year students of this course had undertaken 120 hours placement time in midwifery practice settings prior to data collection whereas third year students, had completed 280 hours. Similarly, students enrolled in the Graduate Diploma of Midwifery had completed 300 hours of placement time in midwifery practice setting prior to data collection. All students identified their particular learning needs required for their role development as a midwife.

The VMC presents processes of communication with women so that the midwife can for example perform health assessments of women throughout all phases of childbearing to recognize issues, implement care and inform women of available resources. Further, the VMC was designed to stimulate intellectual curiosity by students, encourage them to problem solve and engage in reflective practice to evaluate outcomes of care for women and the role of midwives. These attributes align with those of Deakin University (2008) and professional practice as a midwife in Australia as defined by the Australian Nursing and Midwifery Council (2006). There is unlimited access of the VMC for students to assist them in their preparation for placements.

## Conclusion

The VMC has been identified by students in their pre-VMC questionnaire as a resource to support their learning about the role of the midwife and the care of women during early pregnancy. A post-VMC evaluation is to be distributed to all students with results expected to be available during early 2010. There is potential for the development of a suite of programs within the VMC related to care across all phases of the childbearing experience to further support students in their transition into professional midwifery practice.

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