

Collaborative design of a virtual community: engaging students through online simulation

u!magine Distance Education Innovation Grant Scheme 2015-2016 Final Report

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Part 1. Achievements statement

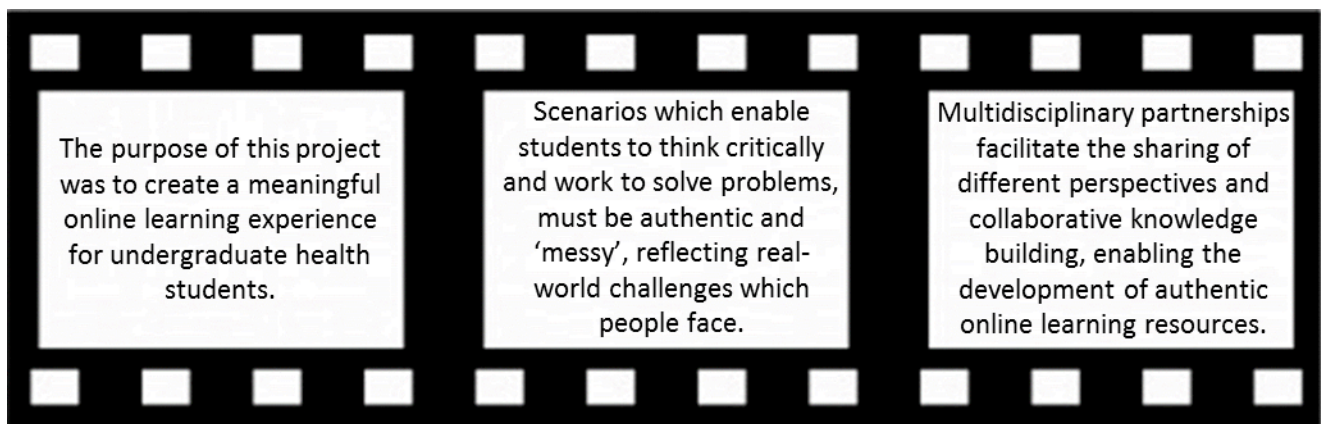
Project title: Collaborative design of a virtual community: engaging students through online simulation

Project team:

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Project time period: 2015_2016

Context:



Project outcomes:

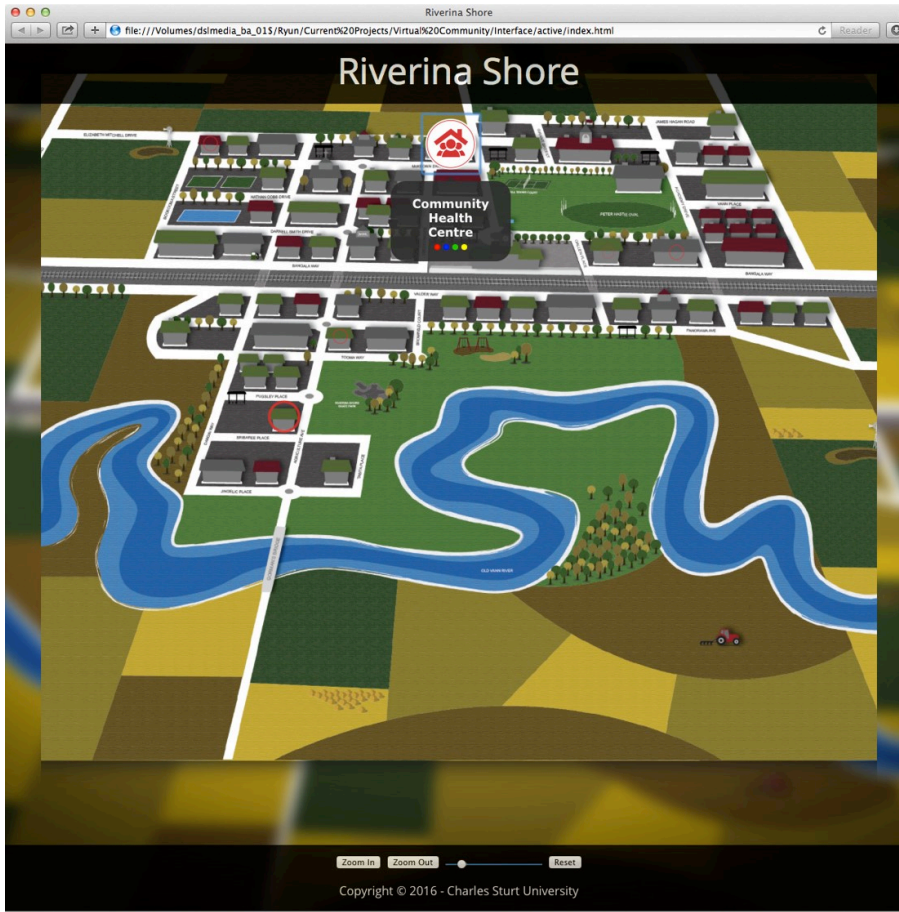
'Riverina Shore' is a virtual community which has been developed within the School of Community Health as an online learning resource for students. The virtual community is presented as an attractive webpage in which client scenarios are embedded in locations such as homes, community health centre and social spaces

https://interact2.csu.edu.au/bbcswebdav/xid-2057103_1

The development of this virtual community was made possible through collaborative partnerships within CSU, between CSU and Albury-Wodonga Health, and most importantly with clients in the community. A model based on activity theory has been developed to illustrate this collaboration between clients, practitioners, academics, media technologists and educational designers.

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Evaluation of this online learning resource with students, academics and practitioners through surveys and focus groups has highlighted its potential for engaging students with learning and enhancing their skills in clinical reasoning.



Students can interact with the media resources at their own pace, using their own sense of logic. It is intended that academics will link to this web resource through subject i2 sites, in order to scaffold the specific purpose of the students' learning experience. The design of Riverina Shore has been planned carefully to enable intuitive navigation around the community, to stimulate the students' curiosity and to ensure easy access to linked online resources. The website is accessible through mobile devices to maximise functionality.

Seeing opportunities for interprofessional practice

It was easy and engaging, much better than getting a plain sheet of paper

Looking behind the scenes at what a person/family/carers are dealing with

Mirrors real-life situations

Simple design, clear and concise

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Part 2. Executive Summary

Project context

This project to design a virtual community emerged from developmental work in a final year subject in the Bachelor of Podiatric Medicine, POD404: Complex Cases in Podiatric Practice. In this subject, students studied a series of online simulated cases whilst undertaking three consecutive 8-week blocks of workplace learning. The purpose of these simulated cases was to complement the students' experience in the workplace, extending their skills in clinical reasoning and enabling their development as critically reflective practitioners. Students reported the benefits of working on these complex cases in assisting them to relate theory to practice. Studying online whilst working on clinical placement also enabled students to implement their learning directly in the workplace. The level of student engagement with this online study was, however, variable and this issue was the major stimulus for further development of the complex cases.

Collaboration between the subject coordinator, media technologists and an educational designer enabled the generation of video animations for two of the individual scenarios. This interdisciplinary practice facilitated a sharing of knowledge and skills, and the emergence of new perspectives. The purpose of this partnership was to design an online simulation which provided a more engaging and authentic learning experience for students and this foundational work informed the u!magine project to design a virtual community.

Aims of the project

- To evaluate the collaboration between academics, practitioners, educational designers and media technologists in the development of an online learning resource;
- To synthesise a best practice model for the collaborative development of online simulations;
- To develop an online simulation comprising a virtual community;
- To evaluate the students' experience of learning within the virtual community.

Project approach

The research design for this project was informed by activity theory. Activity theory originates from the socio-cultural and socio-historical theories of Vygotsky. These theories propose that learning derives from social activity and is mediated by artefacts. Activity theory provides a useful lens to explore collaborative learning processes, because it focuses on the relationships amongst those who are involved in the activity. Engestrom proposed that activity theory is an evolving framework and developed 'the expanded activity triangle' to facilitate activity system modelling.

Project outputs

- A pilot virtual community 'Riverina Shore'. This online resource comprises an attractive webpage in which four client scenarios and supporting resources are embedded in locations such as homes, community health centre and social spaces https://interact2.csu.edu.au/bbcswebdav/xid-2057103_1
- An activity theory based model for collaborative practice in the development of online simulations.
- Robinson, C., McCormack, J., Parnell T. (2016). The design and implementation of a virtual community to support interprofessional education across health disciplines. 30th World Congress of the International Association of Logopedics and Phoniatrics (IALP), Dublin: 21-15 August <http://ialpdublin2016.org/>

Impact of the project (outcomes to date and projected future impact)

Preliminary evaluation of the pilot virtual community with students indicates that it is intuitive to use. The video clips of conversations with real people enable students to see people as they are in a social setting, outside of a hospital or community clinic. These online scenarios enable students to 'look behind the scenes' at what a person is dealing with. The realism of the physical/psychological/emotional/social impact of a condition on the person and their family and carers is evident in the video clips which capture authentic experience. The complexity of human experience is evident in these unscripted narratives and students find these online scenarios to be much more engaging than written text. Practitioners and academics who evaluated the pilot resource also highlighted the ability of the online scenarios to enable visualisation of the relationship between a person, their family/carers and the environment. These authentic scenarios are triggers for problem solving, clinical reasoning and reflection on practice, and are most likely to be used by academics to scaffold student learning in relation to a specific assessment task.

Future development of this virtual community will be undertaken in collaboration with practitioners and academics not only in the health disciplines but also in related fields such as education, business, science, agriculture, social science and humanities.

Key findings

- Interdisciplinary collaboration facilitates a sharing of knowledge and skills, the emergence of new perspectives, and the creation of rich resources
- The design of Riverina Shore as a virtual community is simple, clear and concise.
- Students find the online resources easy to use, fun and engaging.
- The authentic scenarios mirror real-life situations and allow students to see the bigger picture for a client.
- The online resources will complement students' learning in the workplace and also enable opportunities for inter-professional learning.
- The virtual community is scalable to enable the addition of new scenarios relevant to diverse groups of students.

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Part 3. Detailed report

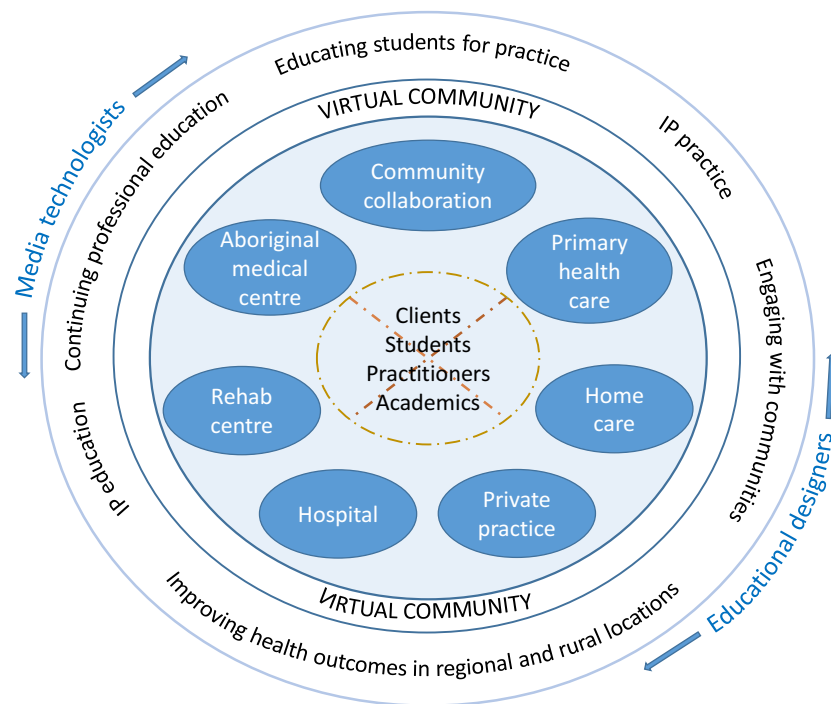
3.1 Context

This project to design a virtual community emerged from developmental work in a final year subject in the Bachelor of Podiatric Medicine, POD404: Complex Cases in Podiatric Practice. In this subject, students studied a series of online simulated cases whilst undertaking three consecutive 8-week blocks of workplace learning. The purpose of these simulated cases was to complement the students' experience in the workplace, extending their skills in clinical reasoning and enabling their development as critically reflective practitioners. Students reported the benefits of working on these complex cases in assisting them to relate theory to practice. Studying online whilst working on clinical placement also enabled students to implement their learning directly in the workplace. The level of student engagement with this online study was, however, variable and this issue was the major stimulus for further development of the complex cases.

Collaboration between the subject coordinator, media technologists and an educational designer enabled the generation of video animations for two of the individual scenarios. This interdisciplinary practice facilitated a sharing of knowledge and skills, and the emergence of new perspectives. The purpose of this partnership was to design an online simulation which provided a more engaging and authentic learning experience for students, and this foundational work informed the u!magine project to design a virtual community. Figure 1 illustrates components of the virtual community 'Riverina Shore'. Clients are central to this community as their scenarios enable students to learn about the person in the context of their broader family and community. Practitioners and academics guide the students' learning by scaffolding their inquiry in the context of a workplace learning experience, or as an element of study within a subject. The places and spaces in the virtual community represent locations in which people interact with health care professionals.

The purpose of designing a virtual community is to make authentic scenarios available to students, without the limitations of time and place. There is an urgent need to increase opportunities for online learning in order to address the constraints of on-campus study and to enhance student engagement. This is particularly relevant for students in undergraduate allied health courses – occupational therapy, physiotherapy, podiatry and speech pathology – whose courses comprise intensive periods of workplace learning at external sites, or in on-campus clinics. Online simulation using authentic scenarios has the potential to reduce the number of workplace learning hours for students. This is beneficial not only in reducing costs to the student and the institution but also in alleviating stress for students as they manage competing demands of study, workplace learning and paid employment.

Figure 1: Schematic to illustrate components of the virtual community: 'Riverina Shore'



The development of meaningful online learning experiences requires a collaborative approach which employs the skills and knowledge of a range of disciplines. Collaborative working between different disciplines involved in learning and teaching has been explored in diverse contexts. Examples of collaborative partnerships include: librarians and information technologists¹; practitioners, technologists, scientists, craftspeople and artists²; educational researchers, technologists, lecturers and students³. These collaborations between different disciplines and different stakeholder groups, enable the incorporation of a range of perspectives to inform project design. All participants in a team bring not only their experience, but also their contacts and networks. Educational designers, media technologists, academics and practitioners are part of larger communities of practice. Thinking and problem solving within a diverse team is therefore, on a much broader scale – not just within a single discipline or School, but across the Faculty and university. This method of working facilitates collaborative knowledge building and enables the development of authentic resources².

It is important to note that although an online simulated community is 'virtual' in that the people and places are contrived, the experience for students and practitioners is none the less real. Interaction with online simulation challenges imagination and enables creative thinking, which is often constrained in the physical environment of clinical practice. A virtual community without physical and temporal boundaries, can reduce some of the barriers to interprofessional communication and collaboration. Online communication creates an opportunity for students and practitioners to become more connected. Importantly, from an educational perspective, the development and

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progression of discussions can be traced⁴ to enable the evaluation of clinical reasoning and problem solving. With the increasing need to extend blended learning and online components in undergraduate health programs, the improved use of online learning spaces to support clinical learning is an imperative⁵.

Aims of the project

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3.2 Approach

Timeline

Apr – Jun 2015	Jul 2015 – April 2016	May – June	July – Aug 2016
Stage 1			
Focus group with interdisciplinary team who developed animation resources for POD404.			
Scoping functional, technical and accessibility requirements for online resource in CSU online learning environment.			
Stage 2			
Concept design and development of scenarios.			
Development of supporting materials.			
Build and bug test online resource.			
Stakeholder feedback to development process.			
Stage 3			
Pilot site available for testing.			
Evaluation by students, practitioners and academics.			
Minor changes made to pilot site to enhance user experience.			
Focus group with project team.			
Stage 4			
Dissemination through u!magine seminar, u!magine newsletter, media release, conference presentation and final report.			

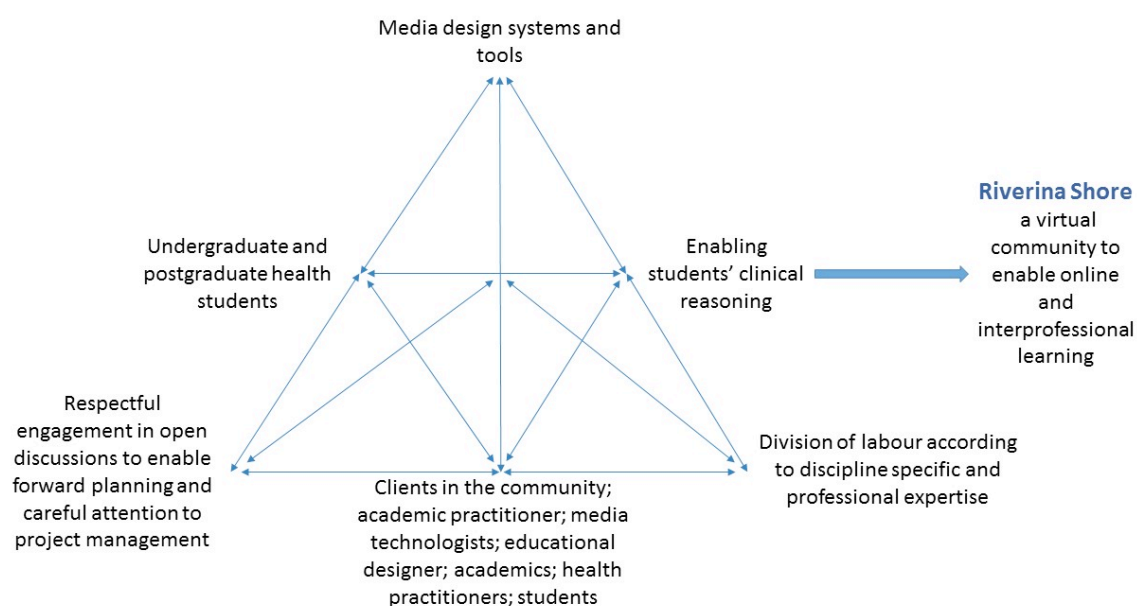
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3.3 Outcomes

The key deliverables from this project comprise an online learning resource, a model for collaborative practice, media coverage and a conference presentation:

- A pilot virtual community 'Riverina Shore'. This online resource comprises an attractive webpage in which four client scenarios and supporting resources are embedded in locations such as homes, community health centre and social spaces https://interact2.csu.edu.au/bbcswebdav/xid-2057103_1
- An activity theory based model for collaborative practice in the development of online simulations (Figure 2)
- Robinson, C. (2016). CSU News Release: WIN News and Prime news (7 July) and The Border Mail (8 July) <http://www.bordermail.com.au/story/4016630/students-virtual-learning/>
- Robinson, C., McCormack, J., Parnell T. (2016). The design and implementation of a virtual community to support interprofessional education across health disciplines. 30th World Congress of the International Association of Logopedics and Phoniatics (IALP), Dublin: 21-15 August <http://ialpdublin2016.org/>

Figure 2: An activity theory based model⁶ for collaborative practice in the development of online simulations



As a result of this project, interdisciplinary links between academics in the School of Community Health and media technologists in the Division of Student Learning, have been further strengthened. Collaborative practice within media services was also enhanced through this project as media technologists with different skill sets, based on different campuses, worked together to design the virtual community and to create the scenarios. The strengthening of an existing relationship, and the development of new partnerships between CSU project team

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members and the academic-practitioner at Albury-Wodonga Health, is a very important feature of this project. The academic-practitioner had responsibility for recruiting people in the community who were willing to contribute their stories, to enable development of the individual scenarios. The value of this virtual community is the authentic scenarios comprising real people and their families, rather than actors simulating interactions.

A new relationship emerged towards the end of the project between an academic in the School of Nursing, Midwifery and Indigenous Health (SNM+IH), and the academic project lead in the School of Community Health (SCH). This relationship was facilitated by the media technologist (Ryun Fell) who had insight into two disparate projects in two different schools. This outcome is highly relevant because it demonstrates the importance of interdisciplinary collaboration and the value of cross-School and cross-Faculty perspectives. This new partnership between SCH and SNM+IH has enabled the evaluation of one of the scenarios in Riverina Shore, with a group of students in the Masters of Nursing. A summary of the feedback from these students is included in Appendix C and is also addressed in sections 3.4 and 3.5.

3.4 Evaluation and impact

The research design for this project comprised both qualitative and quantitative approaches. Focus groups with members of the project team enabled the collection of rich data about interdisciplinary collaboration. A series of discussions and evaluation sessions with academics in the SCH and practitioners at Albury-Wodonga Health, provided the opportunity for feedback on the developing scenarios and the pilot resource. This iterative process of resource development is important to note and is represented by the two-way arrows in Figure 2. A quantitative approach was used to seek feedback on the pilot resource from students, academics and health practitioners, using a survey tool. Summary data is included as Appendices B + C.

Stage 1: Developing a model for collaborative practice

Two focus groups were held with an interdisciplinary group – academic; academic-practitioner; media technologists; educational designer – to explore the collaborative process of developing an online simulation. The focus groups were scheduled at the beginning and end of the project timeline. The major themes which emerged from these focus groups discussions include: ways of working; collaborative practice; enabling and enhancing student learning; resourcing; challenges; barriers; personal learning; outcomes; implementation. Data from these conversations informed the activity theory based model in Figure 2, based on Engeström's 'expanded activity triangle'⁶.

Stage 2: Concept design and development of cases

A series of discussions was scheduled with members of the project team to develop the design concept and plan content for the virtual community. Outcomes of these discussions enabled a clear vision for the project and established the process for respectful collaboration. Regular project team meetings were documented to provide a record of progress. Academics in the SCH were invited to provide feedback on uncut video footage, in order to assist the project team in selecting video clips with relevance to a diverse group of health professionals. An important element of this stage was the building and bug testing of the resource, in conjunction with the staged feedback from stakeholders. This iterative process of design – feedback – redesign ensures that the online resource is evidence based, authentic and relevant to a range of disciplines.

Stage 3: Piloting and evaluating the virtual community

37 students and 10 academics and health practitioners provided feedback on the pilot resource, using a custom survey tool. Students, academics and practitioners explored the resource at will to enable comment about functionality of the website, accessibility of the resources, relevance of the scenarios, and opportunities for using the virtual community for learning (Appendix B). Additionally, nine Masters students evaluated one of the scenarios in the context of their study for NRS532: Health Assessment for Advancing Nursing Practice (Appendix C).

Following feedback from sessions to evaluate the pilot resource, the virtual community has been trialled with students enrolled in NRS532: Health Assessment for Advancing Nursing Practice, in the Master of Nursing at CSU. Students were required to view one scenario from the perspective of a community nurse who had been contacted to provide home-based care while the client's wife (his primary carer) was in hospital. Students were asked to undertake an assessment with the information provided thus far and identify what additional information would be required for them to put in place a plan of support for the client. A brief analysis of the students' online forum posts revealed some important themes, which illustrate the potential value of this virtual community to engage students in critical thinking (Table 1).

Table 1: Themes and related items derived from the students' online forum posts

Themes	Items from student posts
Visualising the person in their environment enables a more accurate assessment of their needs	Relating level of function and health status to determine the level of support and services required. Need to know what the current service provision is for each of the clients in the scenarios (holistic information)
Enables consideration of IPP and IP approaches to person-focused care	Insight into the person and their partner/family/carers
Authentic narrative facilitates the development of active listening skills and enables time for reflection	Listening the person's story to hear what the client/partner/family/carers need
Stories enable the delivery of extensive detail which is not	Detailed narrative - can replay the audio - no time

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possible within a typical clinical consult	constraints
Enables the time for deep thinking and the space for clinical reasoning	Providing pieces of the information jigsaw saves time for students in searching for and locating information
Facilitates thinking outside the square - expansive rather than reductionist	Able to infer likely scenarios and possible outcomes, from the information provided
Narratives can facilitate students' learning at any desired level e.g. describe; explain; integrate; evaluate; theorise; construct	Text demonstrates a range of domains of learning

Future opportunities for evaluation exist within subjects offered in the SCH and the SNM+IH in the first instance. Additionally, there are opportunities to engage students in other disciplines such as Education, Social Sciences, Exercise Science, Nutrition, Pharmacy and Business. The scenarios in the pilot virtual community offer rich potential as online learning resources. It is anticipated that an Educational Designer would work with academics to assist in scaffolding learning experiences, to enable more detailed feedback from students about how this virtual community can facilitate their engagement in learning, develop their skills in clinical reasoning and enable opportunities for inter-professional learning.

3.5 Dissemination and sustainability

This project has enabled networking between Schools at CSU, between media services units on different campuses, and between the School of Community (SCH) and Albury-Wodonga Health (AWH). Opportunities for networking were facilitated by various means for example:

- u!mage research project seminars enabled insight into other projects and provided the opportunity for discussion about project linkages e.g. embedding a child protection scenario in the Riverina Shore virtual community;
- on-campus project development feedback sessions at CSU enabled the participation of academics from the School of Nursing Midwifery and Indigenous Health and the School of Education, together with SCH academics;
- collaboration between media technologists located on different campuses, to source relevant expertise e.g. graphic design for virtual community and film and audio recording for the scenarios;
- project evaluation sessions at AWH with health practitioners, clinical educators and students from allied health and nursing;
- sharing of a data collection resource by the media technologist in the project team with an academic in the School of Nursing, Midwifery and Indigenous Health.

These examples illustrate the value of an interdisciplinary project team. Each member of the team brings not only their knowledge and skills but also their network of contacts and collaborators. The broader u!mage team

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provided the infrastructure and cohesion between a series of diverse projects, enabling conversations between project teams to explore opportunities for intersection.

Possible mechanisms to disseminate this online learning resource within CSU include: a target session for educational designers to raise awareness of the resource and promote it through the course design process; collaboration with the Quality Learning and Teaching (QLT) leaders in each of the Faculties, to enable broader discussions about the potential use of this resource for learning, teaching and assessment. A summary of the trial with the Masters of Nursing students could be developed as an exemplar and shared through the u!magine Learning Exchange. Resource guides could also be developed to provide tutors with a series of questions/steps to enable scaffolding of a learning experience based on this resource, for example: purpose of the task; alignment with learning outcomes; brainstorming to facilitate problem solving.

The pilot project has also been disseminated outside of CSU. The design of the virtual community and preliminary pilot evaluations was presented to researchers and clinicians at an international conference in Dublin (International Association of Logopedics and Phoniatrics), in August 2016. This conference is primarily attended by speech-language pathologists who were interested in the development of the resource and the potential for longitudinal follow-up of students educated with the resource, through tracking their knowledge and skills over time. Further dissemination with other health professional groups (academic and clinical) will occur through additional conference presentations over the next 6-12 months. It is also intended that two papers will be submitted in the next 6-12 months; the first will focus on interdisciplinary collaboration in designing the virtual community, whilst the second will focus on the implementation and evaluation of the resource.

Opportunities for extending the use of the resource across the university have been discussed, including implementation in subjects within other Schools and Faculties, particularly in the fields of Education and Business. Further research into 'how' the resource best enhances student learning is one specific example which could comprise data collection from diverse groups of students. The purposeful design of Riverina Shore will facilitate the addition of new scenarios suited to the needs of students, academics and practitioners in a range of disciplines.

This project has clear potential to lead to an external grant application, which could be developed by a cross-School and cross-Faculty project team. A community is inherently complex – comprising health, social, cultural, environmental and political issues –and this would enable participation of students from a broad range of disciplines. This online simulation could be used by multiple professions in their own discipline groups, for example: occupational therapy; physiotherapy; podiatry; rehabilitation science; speech pathology; nursing; pharmacy; nutrition and dietetics; dental and oral health; education; exercise science; environmental sciences; social sciences; business studies. Additionally, the community may be used for inter-professional activities in which students learn from, with and about each other, as they interact with the cases. 'Riverina Shore' therefore, has the potential to enable inter-professional learning about practice. As the virtual community provides a simulated workplace learning

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experience, its use may better prepare students for workplace learning and possibly enable a reduction in the hours/weeks required for external placements. Core skills such as collaboration, communication, problem solving, clinical reasoning and project management could be developed using this online learning resource, thus creating an opportunity for reducing workplace learning expenses for students, the School and the university.

3.6 Wider implications

This project used activity theory to inform the process of interdisciplinary collaboration between diverse groups of practitioners, to create a virtual community. Activity-oriented design methods have been reported to enable collaborative knowledge building in e-learning³ but in this project, clients in the community are key members of the interdisciplinary team (Figure 2). This is a novel approach and makes the Riverina Shore resource different to other virtual communities developed in Australia and the US such as Wiimali⁷. By building an online community around real people's stories rather than simulated narratives delivered by actors, this enables authenticity. The evaluation feedback from students and practitioners demonstrates clearly the value of these authentic narratives, in facilitating critical thinking, clinical reasoning and visualising opportunities for inter-professional practice. The learning benefits of these authentic scenarios in which students can see clearly the connections between person – family – environment – occupation, may be more extensive than is possible through the use of digital stories^{8,9}

Feedback from students in the Masters of Nursing course provides some very important points for consideration in relation to online learning and teaching, and engaging students with the complex tasks of clinical reasoning and problem solving. These processes are fundamental to safe, effective, person-focused care and typically are grounded in workplace learning experiences, where students work with clients in a range of settings. Specific issues for consideration in relation to the potential of this online learning resource to enhance student engagement and enable deep learning include:

- Ability to visualise the person in their environment enables a more accurate assessment of their needs;
- Stories enable the delivery of extensive detail which is not possible within a typical clinical consult in a workplace learning environment;
- Authentic narrative facilitates the development of active listening skills and enables time for reflection;
- Enables the time for deep thinking and the space for clinical reasoning;
- Facilitates thinking outside the square - expansive rather than reductionist;
- Enables consideration of inter-professional practice and inter-professional approaches to person-focused care;
- Narratives can be used to facilitate students' learning at different levels e.g. describe; explain; integrate; evaluate; theorise; construct.

Simulation incorporates learning and teaching which relates to the 'real world' of practice. Simulated learning has the potential to enable students to engage in critical analysis of their own actions, to reflect on their practice and to critique the decision making of others¹⁰. The success of simulation is defined by authenticity¹¹; fidelity (psychological, sociological, environmental)¹²; the level of student engagement (enthusiasm and motivation)¹¹; and facilitator style and background¹¹. The risk with simulation is that the messiness and complexity of the real world is oversimplified¹³. The value of Riverina Shore as a virtual community is the participation of real people in the development of the audio-visual resources. Real people, telling their unscripted story in authentic contexts, ensures that the 'messiness and complexity' of their lived experience is not diluted. Simulation scenarios must be truly contextual, reflecting effectively the real life tensions and issues which people cope with on a daily basis. This virtual community could be used effectively to help prepare students for workplace learning experiences, especially in terms of empathy development and holistic person-focused care.

This project was motivated by a number of drivers, at a professional, institutional and national level. At a professional level, there is a need for students working in the allied health sciences to become inter-professional practitioners, capable of working respectfully with other professionals to respond holistically and effectively to the needs of clients¹⁴. It is a professional standard for most allied health courses that students will graduate with the skills and knowledge to engage in inter-professional practice;^{15,16,17} particularly essential for students who will graduate to work in rural and regional areas, and may be the initial or key point of contact for those clients. Consequently, there is a need for these students to undertake learning experiences that prepare them for this inter-professional practice.

Given this professional need, it follows that there is a need for institutions to provide learning experiences (including workplace learning experiences) that enable the development of knowledge and skills which are fundamental to inter-professional practice. Furthermore, there is a need for institutions to provide these experiences in ways that are accessible and flexible to the needs of their students. This means re-thinking traditional on-campus teaching and traditional workplace learning, and incorporating new technologies and virtual spaces.^{18,19} Changes in the provision of learning and teaching experiences, however, are associated with another need - that of ensuring teaching staff have the appropriate training and ongoing support needed to design and deliver the necessary content, in ways that are engaging, innovative and accessible^{20,21}. These institutional level needs are illustrative of needs at a national level to re-think the higher education landscape to cater to students who require flexible delivery of subjects/courses and who desire interactive and online educational experiences²².

3.7 Conclusion and reflections

The design and development of this pilot virtual community was enabled through interdisciplinary collaboration, within a team comprising media technologists, a practitioner-academic, an educational designer and

academics from different health disciplines. The success of this project is attributed to the high level of motivation of each of the team members and their willingness to trust, and learn from, each other. The strength of an interdisciplinary team is the diverse knowledge, skills, perspectives and networks which each team member can contribute. All members of this team were comfortable with uncertainty about how the project would unfold and this enabled creative thinking and a flexible approach to working. A dedicated and enthusiastic project leader is an important feature of this team, facilitating open discussion and debate, encouraging respect amongst the team members and enabling a safe forum for testing out ideas. Importantly, this respect extended to the clients who participated in the production of the online scenarios. The project's key contributions are: 1) interdisciplinary collaboration for research and teaching; 2) the diversity and authenticity of learning and teaching experiences enabled by online resources, and the value of community engagement in curriculum design; 3) the value of an online learning resource in engaging students with clinical reasoning and facilitating learning about inter-professional practice; and 4) the potential implications for organising and funding workplace learning experiences.

Factors that impeded the success of this project included: competing workload demands of all team members and limitations on time; the limited perspectives of some academics in the feedback sessions, in visualising the potential of this resource for teaching and learning; and unexpected/unplanned situations that occurred on the day(s) of filming which limited the variety of scenarios which could be captured.

In summary, this project exemplifies the strengths of interdisciplinary collaboration and the value of engaging people in the community, in order to capture their 'real world' narrative to create authentic scenarios which engage students in their learning.

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Appendices

Appendix A: Financial report

Budget							
Budget item number	Budget item description	Basis of calculation	Total	Total needed in 2015	Total needed in 2016	Spent	Remaining
e.g. 1	e.g. Teaching relief Cl1 Jones	e.g. 30 hours @ AX150 \$41.05 + 16.5% on costs					
1	Salary recovery level C academic	104 hours @ \$57.7/hour + 25.5% on costs	\$ 7,531.00	\$ 4,344.81	\$ 3,186.19	\$ 7,531.00	\$ -
2	Casual academic (Qual)	40 hours @ AX185 \$73.64 + 16.5% on costs	\$ 3,431.63	\$ 1,715.82	\$ 1,715.81	\$ -	\$ 3,431.63
3	Educational designer	100 hours @ \$50.56/hour + 25.5% on costs	\$ 6,979.81	\$ 6,281.83	\$ 697.98	\$ -	\$ 6,979.81
4	Practitioner-academic	140 hours @ AX185 \$73.64 + 16.5% on costs	\$ 12,010.68	\$ 12,010.68	\$ -	\$ 5,112.20	\$ 6,898.48
5	Media technologist	500 hours support in kind	\$0	\$0	\$0	\$ 71.82	-\$ 71.82
6		210 hrs: Senior media tech leading design + dev				\$ -	\$ -
7		140 hrs: Media tech graphic design + dev				\$ -	\$ -
8		140 hrs: Media tech AV creation + dev				\$ -	\$ -
9	Catering expenses	Catering for event on 23 March				\$ 71.82	-\$ 71.82
10						\$ -	\$ -
			\$ 29,953.12	\$ 24,353.14	\$ 5,599.98	\$ 12,786.84	\$ 17,166.28

The original approved budget contained an allocation of \$3431.63 for a casual academic (40 hours) and \$6979.81 for an Educational Designer (ED) (100 hours). The academic project team member to which the 40 hours had been allocated and the ED, both resigned their positions at CSU in the first quarter of 2015. The academic team member was not replaced and ED support for this project was sporadic until early 2016, when a permanent ED joined the team. No application was made to request a funds transfer to the Division of Student Learning, for cross-payment of ED hours. The \$17166.28 remaining funds comprise the unused academic and ED hours, in addition to unused hours allocated to the practitioner-academic.

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Appendix B: Evaluation survey data

Survey results

Table 1: Number of participants completing a survey

	Allied HA	Dentistry	Dietetics	Nursing	Occ Therapy	Physiotherapy	Podiatry	Speech Path	
Students	2		1	9	3	4	8	2	29
Academics + practitioners		1		4	3	2			10

Table 2: Viewing the four scenarios with the perceived purpose (students) and potential purpose (academics and practitioners) for using this resource

	Scenarios viewed				Purpose for using the virtual community				
	A+Y	D+R	D+S	S	Increase knowledge of specific conditions	Increase knowledge of multiple factors influencing health	Improve skills in problem solving/clinical reasoning	Extend understanding of IPP	Extend knowledge of scope of practice of HPs
Students	27	26	26	27	13	21	12	17	13
Academics + practitioners	5	3	5	6	7	9	8	5	6
	32	29	31	33	20	30	20	22	19

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Table 3: Interaction with the virtual community

	Device used		Level of intuitive use		
	Tablet	Computer	Very	Somewhat	Not at all
Students	21	6	13	11	0
Academics and practitioners	7	2	2	7	1

Further comments	
Students	<ul style="list-style-type: none"> • Great way to use technology and the average age group of a uni student • It was easy and engaging, much better than getting a plain sheet of paper with the case information • Something I have not used as a learning resource so it is new and exciting • Being able to view the whole community is good • Found the information was informative and in an easy format • Good insight into people in the community • Easy to navigate • No problem with navigation – forward or back • Liked the prompts e.g. ‘continue’ • Very easy to navigate and aesthetically pleasing • It was very easy to navigate and an engaging resource to assist in learning. Very well set out and planned • The layout of the virtual community was very direct in navigating to find specific information • Navigating could be made easier with more obvious labelling of different places • I liked how explanations of conditions and real life details were provided. Personally I would prefer all the information presented in one location rather than clicking around on multiple areas • The patients so far are all very much small population groups. Perhaps more common conditions would be useful first then build towards others. Obviously it is still growing!
Academics and practitioners	<ul style="list-style-type: none"> • Mirrors real-life situations • Very easy to navigate and likely to be appropriate for a non-computer skilled population • Easy to negotiate the scenarios

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	<ul style="list-style-type: none"> • Links are easy and clear to follow. The flashing circles help • Perhaps after you have clicked on a flashing circle, it could change colour to show you have been there. Easy to forget • Relatively easy to follow - perhaps more options within scenarios to link to other places in the community without going in/out of the scenario • I found it very difficult to navigate and when one section was completed, it did not seem to go back to a useful spot – rather I found myself needing to go back to the spot and start again each time • At one point I clicked off the video and it kept playing but I could not find it again • Was not sure how people linked to the community resources • Could add a photo of each person (scenario)
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Table 4: Student interaction with the virtual community and what they learned from working with the client scenarios

How did you interact with this online resource?	What did you learn from working with the client scenarios	'Learning' themes
<p>1. Viewed resources specific to the client – started at the yellow then explored the community</p> <p>2. All sites and links – websites; YouTube; research</p> <p>3. Initially viewed the yellow 'Information Centre' then explored the community</p> <p>4. I used this resource to gain a better all-round understanding of the patients by visiting different links in the resource</p> <p>5. I explored all of the sites within the community and then viewed the resources for each individual client</p> <p>6. I started with viewing the relevant resources to the case, then started exploring</p>	<p>1. Scope of practice of other AHPs and also some facilities available for certain conditions i.e. the sensory gym</p> <p>2. Broader impacts of disease/ conditions on siblings, wider family and community</p> <p>3. Gave me an insight into other health professionals and gave me a more holistic approach than written case studies which appear 'dry'</p> <p>4. I learned about some of the rural support services available for children with disabilities</p> <p>5. The scenarios highlighted the importance of multidisciplinary health care and provided a visual aid in displaying the involvement of each individual within the community healthcare setting and their home, and the impact their health has upon their overall wellbeing</p> <p>6. I learned about the emotional /mental impacts a disability or illness places on the individual and their family/carers/. It also highlighted areas that we can involve other health practitioners</p> <p>7. Rehab process – the visual was helpful. The way autism</p>	<ul style="list-style-type: none"> • Seeing people outside of a clinic setting/in the community/in a social setting • Seeing the bigger picture for a client • Looking behind the scenes at what a person/family/carers are dealing with • Realising the physical/psychological/emotional /social impact of a condition on the person/family/carers/community • Seeing opportunities for IPP • Realising the positive impact of IPP on the person/family/community • Realism

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<p>other sites due to the overlap between cases e.g. having the same GP</p> <p>7. I read the write-ups, watched the videos and visited the external links. I checked out all the sites in the community</p> <p>8. Specific to the client</p> <p>9. I viewed all the patient profiles within the community</p> <p>10. Viewed the resources relevant to the specific client</p> <p>11. Explored the community – was interested to know how the program worked and how each client interacts with services and resources available</p> <p>12. Explored sites in the community</p> <p>13. Explored each client and looked into some of the available resources</p> <p>14. Explored all the sites and then decided to look at the clients who I was interested in</p> <p>15. Collated notes: whole site; community; resources; gym; homes; links to other sites</p>	<p>impacts not just on the family but also on the individual</p> <p>8. The information was very personalised, like what you would expect when actually attending to a client or patient. There are many more resources available in each discipline</p> <p>9. Social environment of the patients</p> <p>10. It's close to real life scenario and easy to see the bigger picture of the client's situation</p> <p>11. Felt that the program was user-friendly and easily explained. Liked the simplicity of the idea</p> <p>12. About how interdisciplinary involvement can have a positive impact on an individual and their family</p> <p>13. The opportunity I need for a multi-disciplinary approach when working with clients</p> <p>14. There's a lot that the family deals with behind the scenes of an appointment at the clinic</p> <p>15. Great videos and information; how health professionals interact; seeing people in the community; complexity; client priorities; interprofessional practice; personal insights</p>	
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Table 5: Academics and practitioners thoughts about using this online resource in their teaching

Teaching purpose	Number of respondents
• To facilitate synchronous online discussion	0
• To facilitate asynchronous online discussion	1
• To facilitate discussion during an on-campus teaching session	4
• To facilitate students' self-directed study	4
• To scaffold learning with direct relevance to a specific assessment task	7
• Other	<ul style="list-style-type: none"> • To present a specific case study and highlight interprofessional discussion points • To expand on current learning opportunities being experienced on clinical placement • Used as part of orientation to placement e.g. pre-reading • To increase awareness of the impact of conditions on the family/carers • To create person-centred care and individualised care plans

Table 6: Relevance of the media resources to each discipline

Academic/practitioner	Highly relevant	Mostly relevant	Somewhat relevant	Not relevant
Dentistry/oral health	1			
Nursing	1		1 (acute nursing)	
Occupational Therapy	1	2		
Physiotherapy	1			

Table 7: Good features of the virtual community and suggested improvements

	Good features	Suggested improvements	Overall themes
Students	<ul style="list-style-type: none"> • Real life people – not actors or case studies • Real people • Amazing real-life scenarios • Family members perspective • Empathy • Able to be used/adapted by other Schools and disciplines • Able to be expanded (virtually unlimited) • Gives students a real life clinical experience. Resources also give students extra opportunities for more information • Links to information relevant to each case study • Informative not only about physical effects but also mental/emotional • Highlights an individual's involvement throughout the community • Shows the variety of community members and needs • Highlights importance of multidisciplinary care • Resource section – resource links are readily available • Could be used in many learning environments • Videos supplementing theory • Videos are engaging • Simple scenarios that are broken up into parts • YouTube footage makes it more personal 	<ul style="list-style-type: none"> • Hard to hear interviewer questions – maybe use subtitles? • Label the person's home to make navigation easier • Name of the person/family in the house could show up when the cursor is taken over the area • If each person and family spoke about specific experiences with each discipline and the types of thing each discipline did and the support they provided that made the biggest difference – timelines of recovery/improvement. It would give a nice idea of how long it takes for recovery and where along the way does different help come in handy • Week by week progression • Some more common populations – more likely to encounter • More discipline-specific information available • Involvement of more cases • More information about each case • Include more medical history and progress notes from health professionals for better background information • More resources e.g. the floor plan was 	<p>Good features</p> <ul style="list-style-type: none"> • Reality • Other people's perspectives • Variety of community members and their needs • Simple design, clear and concise • Accessible resources • Interactive and fun • Visually appealing • Highlights IPP and facilitates IPL <p>Suggested improvements</p> <ul style="list-style-type: none"> • Add more labelling to the home page • Scaffold the scenarios to add more detail and structure • Include more information about and from a range of health professionals • Enable easy backwards navigation • Extend the community – people, places, spaces and resources

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	<ul style="list-style-type: none"> • Easy navigation – even if you are not completely computer literate • Ease of navigation and links • Interactive • Looks good/attractive • Very engaging/highly engaging • More engaging than a text book • Communicated in a clear and concise layout • Clear and easy to use • Fun • Simplicity • New experience for learning <p>Additional feedback</p> <ul style="list-style-type: none"> • Very exciting project! • Truly awesome! • I think this is a great resource that can be used by a team of health professionals to highlight the importance of IPP • Good for later years • PBL • IPL • Videos were not overly long, which was good • Short, sharp, to the point – remaining engaged 	<p>great. Xrays etc. would be good</p> <ul style="list-style-type: none"> • Questions/MCQs – what would you do? • Adding referrals e.g. for an ischaemic patient refer to a vascular surgeon. This could unlock more information e.g. angiogram results • Links to professionals working • Discharge planning • Place all the information close together • Videos should stop as soon as you close the box • Graphics • Back button once in scenario • Can't go back to previous area – have to fully close • Labelling on home page/village • Add a hospital, pharmacy, mental health centre, oncology, community nursing, diabetes and wound care • Make it available outside of CSU 	
Academics and practitioners	<ul style="list-style-type: none"> • Authentic stories • Real-life examples • Clients are realistic • Descriptive words used – alive, more real, tangible • Different types of scenarios • Looks at multiple aspects of their lives – 	<ul style="list-style-type: none"> • Overview of Riverina Shore that provides information about the services available to assist students to make links to individual's needs and accessibility of services to meet these needs • Increase in case studies and resources • More background information to situate 	<p>Good features</p> <ul style="list-style-type: none"> • Authenticity • Link between person, family and environment • Illustrates a person's capabilities • Diverse applications <p>Suggested improvements</p>

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	<p>holistic approach</p> <ul style="list-style-type: none"> • Inclusion of carer's perspective • Link between the person, family and environment • Reflects an actual community setting • Able to see how patients interact with the community • Very useful for clinical science with great complex cases and having students learn about the person rather than just the condition • For dental practice, students struggle with the concept of dealing with the whole person and their context • Personalises clients – for young students who do not have the life experience this resource provides them with some insight. The resource helps to make the situation real and students can develop their professional skills • Can help students develop empathy • More complex situations is great for the students • Useful for problem solving scenarios for treating these patients – social contexts • Great for the development of clinical reasoning activities • Easy for demonstration purposes • Multiple case studies • Comprehensive data • More practice • Would work well with PBL 	<p>each story within the context</p> <ul style="list-style-type: none"> • Scaffolding the resources – e.g. hidden resources available only when students ask or search for specific information • Possibility? – a case without the condition being mentioned, but you get the information and life experience of the client dealing with the condition but the students need to research what the condition is from the available information (diagnosis) • Complex medical issues can be discussed • Ability for program to evolve • Could look more like a rural setting • Interprofessional assessment and treatment • Include an in-hospital scenario e.g. met call to enable discussion • Discussion questions for each scenario to extend the knowledge of the students • Include a search engine within the resource • Navigation needs attention • Fine tuning of programming • Fit on iPad screen • Maintenance of the resource – who/when/how? How to keep the project moving forward? 	<ul style="list-style-type: none"> • Requires contextual detail • Include discussion prompts/questions to facilitate student learning • Include hospital scenarios • Navigation requires attention
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	<ul style="list-style-type: none"> • Good in that students need to sort through what is relevant from the irrelevant • Easy to see layout • Easy to utilise • Showed how patients move – allowed movement analysis • Web resources linked to provide relevant information • Looks engaging • Good for online learning • Transferable in use – could be used in many different ways • Lots of potential <p>Additional feedback</p> <ul style="list-style-type: none"> • Could flip learning or use PBL format – what is known, what needs to be known etc. • It would be difficult to include everything within the scenarios that would apply to every discipline or cover all aspects of the case • Could talk about care planning, patient education and discharge planning • I can see how it can be used but would be unlikely to initiate it as a tool when supervising students as I like the face to face contact • A horticulturist could see how this can be used in his discipline • One academic wondered about having questions but the others could see that you build the activity for students outside the tool 		
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General feedback		
Students	Academics	Practitioners
<p><i>Online learning experience</i></p> <ul style="list-style-type: none"> • Attractive resource which motivates exploration. It's really cool! • It's a different learning experience • It is important to keep the video clips brief in order to maintain the user's engagement <p><i>Client simulation</i></p> <ul style="list-style-type: none"> • Video clips show the person, their facial expressions and their body language which you cannot get from reading text • Like real clients • Great for nurses to see people in the community <p><i>Relevance</i></p> <ul style="list-style-type: none"> • It's good not to be connected to a particular discipline or subject • Great resource to learn about other disciplines and care pathways <p><i>Resource development</i></p> <ul style="list-style-type: none"> • Increase the number of case scenarios and the variety e.g. include a deteriorating patient; mental health; renal; oncology; discharge planning • Could map the patient journey 	<p>Clarify the purpose of this learning resource i.e. a stimulus resource and not an adaptive release resource</p> <p><i>Design issues</i></p> <ul style="list-style-type: none"> • Use different coloured circles to differentiate residential places from social spaces • Information Centre – needs to provide contextual information about the community of Riverina Shore. Where is the community? What size is it? What are the demographics? etc. • Include key words relating to each of the scenarios at all of the locations – touching the location button would reveal the key words • Illustrate the connections from one location to other locations in the community, to demonstrate the link between people (scenarios) and places e.g. line connections • Require 'back buttons' for all actions • For each of the scenarios there needs to be an indicator that there is more information in other places <p><i>Scaffolding the students' learning</i></p> <ul style="list-style-type: none"> • Scaffold the learning journey/scaffold the application of knowledge 	<p><i>Design issues</i></p> <ul style="list-style-type: none"> • Is it possible to have two levels on each of the location icons e.g. touch the button once and the names of the place appears; double tap opens the icon? <p><i>Potential use as a learning resource</i></p> <ul style="list-style-type: none"> • Could be used to supplement classroom and client teaching sessions – it will not replace the experience of working with real people • Use for pre-reading/prep/self-directed study prior to working with clients • Enables lateral thinking • Use it to demonstrate a client's capability outside of the acute setting • Use it with groups of students to stimulate discussion and to explore the resources to enable learning

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	<ul style="list-style-type: none"> • Consider including the 'practitioner's voice' to enable a student's understanding of interprofessional practice • Could link to an i2 Organisation site which houses generic resources, relevant to all of the scenarios e.g. ICF; person-centred care; goal setting in interprofessional practice; service delivery options • Could include two buttons - one linked to scenario-specific resources and one linked to the i2 site • Requires the inclusion of question prompts e.g. where to now? <p><i>Scenario detail and resources</i></p> <ul style="list-style-type: none"> • Ensure that the video clips align with the place e.g. state on the introductory slide, what Dick's relationship is to the health centre • Floor plan – 'Richard's room' but Dick's name is used – be consistent with labels • Check the link to the 'using innovative technologies' in Aaron's resources • Add a dysphasia link to Stewart's resources • Increase the emphasis on communication resources, particularly in relation to Stewart and Dick's scenarios • Extend the range of resources linked to 	
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	each of the video clips	
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Appendix C: Summary survey data for students enrolled in NRS532: Health Assessment for Advancing Nursing Practice

u!magine project_Riverina Shore Student survey_pilot (8 surveys completed)						
1.	In which subject did you use the virtual community 'Riverina Shore'?	NRS532 Health Assessment for Advancing Nursing Practice				
2.	Which one of the virtual clients did you work with in this online resource? Please identify all relevant client scenarios.	Dick + Sandra				
3.	What did you understand as the purpose of working with the client scenario(s)? Please check all relevant responses.	To increase my knowledge of specific conditions relevant to my professional practice	To increase my knowledge of the multiple factors which influence a person's health i.e. physical, emotional, social, psychological, spiritual, environmental	To help me improve my skills in problem solving/clinical reasoning in order to enable a positive outcome for the client	To extend my understanding of interprofessional practice	To extend my knowledge of the scope of practice of other health professionals
		3	5	7	3	3
4.	How did you interact with this online resource? For example, did you just view the resources relevant to the specific client or did you explore other sites in the community?	<ul style="list-style-type: none"> I did review resources specific to client, but would like to review other sites in the community as it is a really engaging learning tool OT report, recorded interview, review of linked Falls Management Centre It was good I viewed all the resources in the community that applied to the scenario I looked at other sites 				
5.	Which device(s) did you use to engage	Mobile phone	Tablet	Laptop computer	Desktop computer	

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	with the client scenario(s)?		1	6	1	
6.	How intuitive did you find navigating and using the virtual community?	Very intuitive 2	Somewhat intuitive 6	Not at all intuitive		
7.	If you answered 'very or somewhat intuitive' to question 6, please provide a brief explanation for your response.	<ul style="list-style-type: none"> • Riverina Shore is a very thought provoking resource. It makes you want to keep exploring and put pieces of the puzzle together. • Some difficulties in knowing if you had reviewed all sources available • Being so interactive made the process a lot more interesting than just reading a scenario • It allowed me to think further or beyond normal bias • It was quite easy to navigate around • It required some exploration to get a level of understanding 				
8.	If you answered 'not at all intuitive' to question 6, please provide a brief explanation for your response.	N/A				
9.	What did you learn from working with the client scenario(s) in Riverina Shore?	<ul style="list-style-type: none"> • How to process information and apply clinical reasoning. • Exploration of client scenario, consideration of client scenario in context of clinical reasoning cycle • We all process information differently • Clinical reasoning • Formulating a plan • Easy to use • Wealth of information on the site • How little I know 				
10	List three good features of Riverina Shore.	<ul style="list-style-type: none"> • Engaging • Thought provoking scenarios • It reflects real life situations in a safe environment to explore • OT assessment • Videos allowed direct observation of client (interview + observation 'walking video') • Mixture of written materials and videos • Interactive approach • The way its set up it feelings like you're dealing with a real case in your own practice • Videos 				

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		<ul style="list-style-type: none"> • Map • Easy to navigate • Well set out • Videos weren't too long • It worked
11	List three improvements or modifications which you would suggest.	<ul style="list-style-type: none"> • I did enjoy exploring Riverina Shore and can't think of any improvements needed to improve this experience • List of resources to review – would provide a checklist
12	Please provide any additional feedback for the project team.	<ul style="list-style-type: none"> • Videos were short and relevant, not too time consuming
13	Please state the course in which you are currently enrolled and your year level.	<p>Master of Nursing</p> <p>1st year – 7</p> <p>2nd year - 1</p>