ACU AUSTRALIAN CATHOLIC UNIVERSITY

ACU TEACHING DEVELOPMENT GRANTS

2023-2024

FINAL REPORT

ACU TEACHING DEVELOPMENT GRANTS

The Teaching Development Grants (TDG) program at ACU is designed to support scholarship of learning and teaching, curriculum development and innovation in higher education learning and teaching. TDGs are open to individuals or teaching teams (including professional staff) for projects designed to enhance student learning at the University.

Project reports

A Teaching Development Grant project leader is required to submit a final project report, including an expenditure report within 3 months of project completion, to the Awards and Grants team (CEI@acu.edu.au). Modifications to the report may be required.

The project leader (or a member of the team) is encouraged to present a summary of their project findings to the Australian Catholic University community through a School or Faculty seminar, CEI Showcase and/or through an e-bulletin. Project teams are strongly urged to seek appropriate publication and dissemination outlets for their project.

Format

The Final Report should follow the template headings below. It should be no more than 5 pages with standard 2.5 cm margins, 11 point Arial font.

The only attachments to the application are the signed project team signatures, the Head of School endorsement and a financial acquittal.

Contact

Further advice can be sought from the Awards and Grants Team, Centre for Education and Innovation, at CEI@acu.edu.au.

ACU TEACHING DEVELOPMENT GRANT

FINAL REPORT, 2023 - 2024

1. **Project Title: PaedSim - Optimising interprofessional education and clinical skill development using an authentic simulation environment.**
2. **Project Leader**(s): Dr Natalie Berg, Assoc Prof Margaret Wallen
3. **Other staff** involved in the project: Dr Melanie Barlow, Krystal Furey
4. Contact details for the Project Leader(s): Ph: 02 9465 9063 E: natalie.berg@acu.edu.au
5. **ACU Priority Area**: Distinctive, inclusive, and research-informed professional learning
6. **Project aims** 1. Develop a suite of learning materials and activities (including video case studies, referral information), for implementation in an interprofessional paediatric feeding simulation, known as PaedSim, and 2. Evaluate the outcomes of implementing the suite of learning materials and activities, for interprofessional learning.

7. **Project Outcomes and Impact**

Outcomes the project was designed to achieve	*A brief description of the approach and methodology*
1. Develop a suite of learning materials and activities for PaedSim for delivery in Semester 1, 2024	• Employed project officer, Krystal Furey, senior speech pathologist with expertise in paediatric feeding disorders. • Mapped existing PaedSim content and materials against the redeveloped learning objectives. • Constructed plan for developing new learning materials based on gaps in the existing content, in collaboration with an expert advisory group and student advisory group. • Involved Dr Melanie Barlow, expert in simulation. • New case study and accompanying materials were developed with two clinical partners and family. This included in-kind support from CEI videographer to develop video materials. • Delivered a revised PaedSim in Semester 1, 2024.
2. Evaluation of the outcomes of implementing revised PaedSim, for interprofessional learning	• Engaged with a second student advisory group to advise on study design and implementation. • Obtained HREC and CEI approvals for this evaluation, which proceeded in two parts. **Part 1: Student evaluation** ***Design***: Retrospective pre-post design where students completed a survey at a single time point, but rated their abilities twice: first retrospectively, self-assessing pre-PaedSim knowledge, skills, attitudes, and, again considering their current abilities after PaedSim. ***Participants***. Speech pathology and occupational therapy 3rd year students, from all three campuses (where PaedSim is delivered), who completed PaedSim for the first time in 2024, were invited to participate. ***Methods***. Anonymous online survey consisting of four sections. i. The Interprofessional Collaborative Competency Attainment Scale (Revised; ICCAS-R)[1, 2] ii. Teamwork, Roles and Responsibilities (TRR) Sub-Scale of the Interprofessional Attitudes Scale (IPAS-TRR)[3]

	iii. Two open-ended questions seeking input on 1. the aspects of PaedSim that students believed assisted them to develop interprofessional knowledge and skills, and 2. suggested changes to PaedSim to enhance the interprofessional learning experience. iv. Participant characteristics including previous interprofessional experience. **Part 2: Staff evaluation** ***Design***: Qualitative ***Participants***: All PaedSim facilitators (speech pathologists and occupational therapist who delivered PaedSim) were invited to participate ***Methods***: Focus groups explored perceptions of tutors who delivered PaedSim as to whether the design and implementation of the revised learning materials and simulated activities were effective in enabling students to meet both the revised interprofessional and clinical learning objectives.

- *A brief summary of the relevant literature and how the project advances the existing knowledge and practice at ACU*

PaedSim is an interprofessional simulated learning experience, whereby third year speech pathology (SP) and occupational therapy (OT) students work together to apply their understanding of paediatric feeding disorders to a case study. PaedSim integrates tenets of interprofessional education (IPE), with the teaching and learning pedagogies of simulation and case-based learning. This learning experience is intended to support students' preparedness for practice, by providing students with the opportunity to implement their theoretical knowledge, develop their clinical reasoning, and practice their professional skills, within an authentic interprofessional simulated environment.
Effective interprofessional education is necessary for client centred health care practice. ACU has developed an interprofessional education framework [4] to support the design, implementation and evaluation of IPE curricula in the health sciences. The framework is intended to optimise students' knowledge, attitudes, and skills for effective collaboration with other health professionals, to enhance health outcomes for clients in their future practice. Metasyntheses of low-level studies provides evidence that interprofessional education enhances student knowledge, skills, and attitudes about collaborative teamwork [5]. A simulated environment is a structured and safe place for learning without the added element of working with real clients in clinical settings. Simulation is effective for supporting the development of a range of complex clinical skills [6] including in the field of paediatric feeding disorders [7]. Few studies evaluating IPE and simulation have included allied health students. A recent, Australian mixed methods study of a 3-hour simulated interprofessional learning workshop for 69 SP and OT students in the field of stroke rehabilitation reported increased confidence and attitudes towards interprofessional practice [8]. Closer to the field of paediatric feeding, SP and dietetics students participated in simulation-based interprofessional education related to dysphagia (difficulty swallowing). Significant increases in clinical reasoning, confidence and readiness for hospital practice were reported [9]. The evidence for IPE (including the ACU IPE Framework) and simulation provides a solid base to support the continued implementation of PaedSim. Our findings build on the existing research which supports IPE and simulation as learning pedagogies to promote interprofessional practice. Specifically, we have provided evidence to support the ongoing implementation of PaedSim at ACU. Further, our work has provided direction for evidence-informed development of PaedSim for 2025 and beyond and laid the foundation for further research.

- *An analysis of the factors that were critical to the success of the project or factors that impeded the success of the project (stated in general terms and not specific about individuals)*

Successful factors

1. **Project officer funded by TDG** – ensured dedicated time to engage with the evidence base and collaborate with stakeholders to develop high quality learning materials and activities; and drive their implementation.

2. **Stakeholder engagement** – lent a diversity of perspectives and specific expertise to various aspects of the work, to ensure the quality of the project and outcomes. Stakeholders were:
- *Expert advisory group* – expert clinicians, educators, specialists in IPE and in simulation
- *Student advisory group (*PaedSim content) – to include the student perspective in the development of PaedSim materials
- *Parent advisors* – lent perspectives of navigating life with a child with feeding difficulties.
- *Student advisory group* (Evaluation) – guided the design and implementation of the evaluation aspect of this project and contributed to data interpretation and sharing findings with students. They made a substantial contribution to the student recruitment strategy, participant information letter, and survey form and function. In particular, they advised about implementing the retrospective pre-post design which we believe increased our sample size.

3. Prospectively developed an authentic case study to form the basis of our revised PaedSim. We engaged an infant with feeding difficulties and her mother, along with her usual speech pathologist and occupational therapist to form case studies materials. We first mapped out the required learning and teaching materials which aligned with the PaedSim learning objectives, interprofessional and simulation pedagogies, and the clinical imperatives central to feeding competencies. Video recordings of interactions between the infant, mother and clinicians were genuine but were planned to ensure that they provided the necessary stimulus to address our prospectively determined criteria for learning materials.
4. In-kind videography from CEI – was invaluable for ensuring professionally filmed and edited footage which was aligned with ACU standards and branding.

Factors impeding success

1. This project ran very smoothly. The main issue was the recruitment of fewer than anticipated students, despite the single data point and the strong influence of student perspectives informing student design and implementation.

- *An analysis about the sustainability of the project initiative*

PaedSim is a longstanding interprofessional simulated experience. This project provided evidence to support its ongoing implementation and identified ways to enhance its impact. An additional evaluation, involving an Honours student and outside the scope of this TDG grant, will evaluate PaedSim 2025 to consolidate our understanding of the impact on interprofessional competencies and attitudes. This evaluation will inform our future directions.

8. Evaluation

This section reports the findings of the evaluation, the methods of which are outlined in the table above.

Part 1: Student evaluation – participant characteristics

Fifty-eight of 353 invited students (response rate 16%) participated. Average age was 23.3 years (SD=5.4) and most (98.1%) identified as women. Approximately 70% had some previous interprofessional experience and there was no statistically significant difference in amount of previous experience between speech pathology and occupational therapy students (X2 (3, N=52) = 0.786, p=.853).

Part 1: Student evaluation – quantitative findings

ICCAS-R. The mean score (reflecting students perceived changes in IP competencies following PaedSim) increased by 0.97 (95% CI [0.84, 1.12]) with the lower limit of the CI greater than the *a priori* determined level of minimally important change (i.e., 0.50). There was no difference in the amount of change between speech pathology and occupational therapy students (M=0.08, 95% CI [-0.21, 0.37]). Forty-five percent and 48% of students rated their ability to practice interprofessionally after PaedSim as much better and better, respectively. There was no statistically significant difference between speech pathology and occupational therapy students (X^2 (2, N=52) = 2.240, p=.326).

IPAS. IPAS scores for the total sample increased by 0.49 (95%CI [0.37, 0.60]), reflecting enhanced student attitudes towards IP learning. This change and the lower limit of the 95% CI are lower than the level set as indicating important difference. No difference in the amount of change between speech pathology and occupational therapy students was identified (M=0.09, 95% CI -.016, 0.33]).

Part 1: Student evaluation – qualitative findings. Aspects of PaedSim that students believed <u>assisted them to develop interprofessional knowledge and skills</u>

Content analysis identified five categories (see Figure 1). **Learning scaffolds** captures the value students gave to the teaching and learning strategies/resources that were implemented prior to and during PaedSim. Students perceived benefits in **collaborative learning**, consistent with the mantra of interprofessional learning, to learn from and with their peers of a different discipline. The category **understanding roles**, suggests students discerned value in 'what', not just 'how' they learned about their own and another discipline. The combination of these three categories supports students to **dive right into practice** via the simulated activities/roleplays. At the core, students valued feeling **comfortable to learn**.

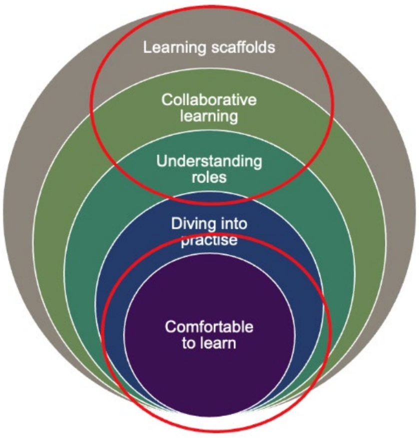

Figure 1: Student evaluation – Aspects of PaedSim which supported student learning

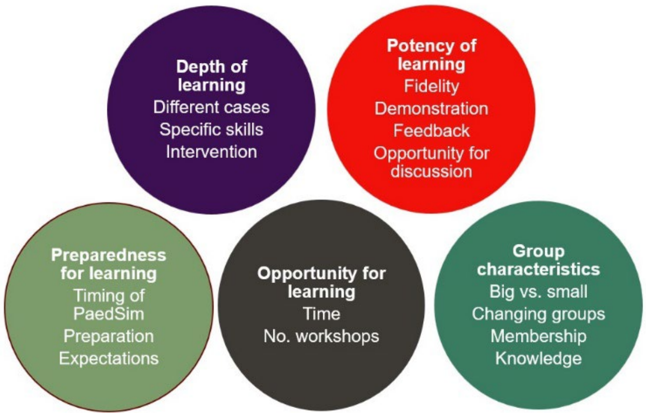

Figure 2: Student evaluation - Changes to PaedSim

Part 1: Student evaluation – qualitative findings. <u>Changes to PaedSim</u> that students believed would enhance the interprofessional experience

Five categories were also identified (see Figure 2). The first and foundational three categories reflect the 'learning supports' students suggested required revision to enhance their learning experience. The first category **preparedness for learning,** captured students' desire for more knowledge before the simulation experience, including more knowledge about paediatric feeding disorders. It seems students were not always certain what to expect from PaedSim and/or alignment with the content of the curriculum that preceded PaedSim. Students also desired more **opportunities for learning** with an extension of the duration and/or number of PaedSim workshops. Students also reflected how the **characteristics of the group** they were working in, including the size of the group, the ratio of students for each of the disciplines and the knowledge of students within the group, influenced their learning experience and required further consideration in future iterations of PaedSim. Two further categories sit atop the foundational three. **Depth of learning** captures students' request for PaedSim to foster a depth of learning about paediatric feeding disorders. Their ideas included engaging with more than one case study, activities that would necessitate the implementation of more specific interventions, and application of knowledge to discipline specific skills, with a particular emphasis on practise using equipment or assistive technology such as specialised seating and bottles. The final category of **potency of learning** subsumes the critical 'ingredients' of PaedSim that students suggested required revision, including the fidelity of the learning experience, with a particular emphasis on the portrayal of the parent role.

Part 2: Staff evaluation – qualitative findings.

Four categories were identified from staff focus groups (see Figure 3). **Preparation or part of the learning** reflected staff perceptions of the skills students found challenging, such as taking on role of parent and providing feedback to peers. They suggested ways to enhance the learning experience through "just enough" preparation whilst acknowledging that the real learning happens during PaedSim itself. For the category **supporting the shift to an IP focus,** staff identified students' initial default was to create discipline-specific goals and interventions. Although PaedSim facilitators and case study videos demonstrated interprofessional collaboration, staff suggested that students required extra support to shift their focus to IP and family-centred approaches. The category **debriefing, where the real learning happens**, represents the value staff gave to opportunities to engage students in regular reflection and debrief during PaedSim. They acknowledged debriefing was a powerful way to enhance students' ability to identify their own strengths and areas for development about their role, communication and provision of family-centred care. The use of the formal debrief tool, PEARLS [10], was considered valuable, but staff needed more support and scaffolding to implement it effectively. The category **authenticity without complexity** reflects a friction point where highly experienced staff wanted to increase the depth of student learning from the case study by imparting more of their own discipline-specific knowledge about managing children with feeding disorders. This runs the risk of diluting the interprofessional focus which is integral to PaedSim, and conflicts with the role of being a PaedSim facilitator of student learning and experience, as opposed to a teacher.

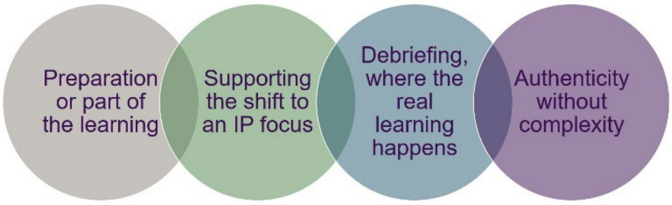

Figure 3: Staff focus group findings

Key changes made for PaedSim 2025 – based on findings from both participant groups.

1. Scaffolding to support students to **shift focus from discipline-specific to family-centred and interprofessional goals**, including an interactive H5P preparation activity and focused debrief during PaedSim workshops.
2. Supporting students to **make connections between prior learning** from the unit during the semester to apply during PaedSim. Included a PaedSim logo within Canvas and tutorial materials; and specific tutor direction to draw attention to relevant material.
3. Heightened student **awareness of role, function and implementation of assistive technology** during tutorial learning activities that precede PaedSim and within the PaedSim workshops.
4. To address student and staff observations of low student confidence in assuming the role of parent during simulated activities, we have:
   - Included a reflective task about parenting a child with disability.
   - Integrated improvisation strategies into the simulated activities of PaedSim.
   - Provided cue cards for students role playing the parent which included guides to direct affective and practical role play persona.
5. Additional resources to equip PaedSim facilitators to implement PEARLS (debrief) during PaedSim.

9. Dissemination

Completed

- Infographic summarising student survey findings for all students who completed PaedSim in 2024
- Presentation at the 2024 CEI Showcase of Teaching and Learning

Underway

- Publication to be submitted to *Journal of Interprofessional Care* (end of 2025)
- Summary for staff participants (March 2025)

References

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10. Eppich, W., & Cheng, A. (2015). Promoting Excellence and Reflective Learning in Simulation (PEARLS): Development and Rationale for a Blended Approach to Health Care Simulation Debriefing. *Simulation in Healthcare : Journal of the Society for Medical Simulation*, *10*(2), 106–115. https://doi.org/10.1097/SIH.0000000000000072

ATTACHMENT 1 - Team member signatures

Please provide below the names and signatures of each team member named in the application.

Applicant(s)	Supervisor(s)
1.Name: __Natalie Berg___	1.Name: ___Michael Reynolds____
Signature:	Signature: __
2.Name: __Margaret Wallen_______	2.Name: ___Elisa Yule_____
Signature:	Signature:
3.Name: ____________________________	3.Name: ____________________________
Signature: __________________________	Signature: __________________________

ATTACHMENT 2 - Financial Acquittal

The full financial acquittal should include a statement of expenditure against the budget allocated, as approved in the project proposal. Your Faculty finance staff will provide support in obtaining this.

An acquittal was obtained from Faculty Finance and was submitted with this report.

ATTACHMENT 3 - Statement from Head of School of Project Leader(s)

I support the Final Report for this ACU Teaching Development Grant project.

Comments

This work is impressive with tangible outcomes and recommendations to inform future curriculum development. The team have worked collaboratively and effectively. The dissemination plan will enable this work to be shared widely. Congratulations all.

E. [signature]

Signed ______________________________

(**Head of School**)

Date: __27/3/2025____________________________

NOTE: This final report should be submitted to: **CEI@acu.edu.au**