

Project-based learning for physiotherapy clinical education quality and capacity

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Abstract

Background: Increasing, supporting and sustaining the capacity for physiotherapy student placements is a priority for universities and the physiotherapy workforce. The interruption, and in some cases, cancellation of placements as a result of Covid-19 has provided an added impetus to consider the use of flexible and adaptive models to meet student learning needs and support new and existing placement host organisations. Project-based learning provides an opportunity to supplement clinical placements through student-led activities that are mutually beneficial for student learning and service delivery needs of the host organisation.

Aim: This paper outlines the pedagogical underpinnings of project-based learning and provides tangible examples of activities that have been adopted within physiotherapy host organisations to support clinical placement quality and capacity.

Discussion: Clinical placement host organisations require flexible, student-centred approaches to supporting clinical placement efforts during 2020 and beyond. Project-based learning has the potential to be adapted across settings to support student learning and host organisation services and their stakeholders. Universities should aim to encourage and support partnerships between host organisations and their students to adopt, evaluate and sustain project-based learning across physiotherapy settings.

Keywords: physiotherapy, clinical education, project-based learning

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Background

Physiotherapy training providers rely on supervised industry-based clinical placements for student training to integrate knowledge, skills and professional behaviours, while developing entry-level clinical performance requirements. With increasing student enrolments and reducing numbers of clinical placement hosts, there is an increasing concern for the sustainability of clinical education (Bostick, Hall, and Miciak, 2014; Forbes and Nolan, 2018). Staff shortages at potential placement sites and access to adequate placements are also known to affect capacity across healthcare settings. Increasing, supporting and sustaining the capacity for student placements where possible, would relieve substantial pressure on current shortages and assist students in preparation for the physiotherapy workforce.

For many physiotherapy students around the world, the most disruptive aspect of Covid-19 is the impact on their ability to successfully complete clinical placement requirements from both a learning and regulatory perspective (Halbert, Jones & Ramsey, 2020). The interruption, and in some cases, cancellation of placements has provided an added impetus for universities and industry to think flexibly and critically about how existing, new, or modified clinical education models and activities

can be used to ensure students can remain engaged in clinical placements in a way that is mutually beneficial for the student and their placement provider; the 'host organisation'. This has also provided an opportune time to investigate, reflect and, through industry partnership, explore how innovative approaches to supplementing existing placements or expanding part-time placements into full-time immersions can be achieved.

Such innovation may provide existing host organisations with the opportunity and flexibility to host more than one student, or host students year-round where previously holiday periods, fluctuating services and other staff commitments may have precluded their capacity. Creating innovative ways to support placements also has the potential to facilitate smaller, part-time or emerging organisations to begin, or continue to, host physiotherapy students where traditionally barriers may have limited their involvement. Importantly, these innovations can help existing host organisations to continue student placements in a way that is mutually beneficial where patient loss, staff attrition or changes to services have occurred following regulatory or service-use implications resulting from Covid-19.

Through support from The University of Queensland (UQ), approaches to introduce and expand project-based learning (PjBL) between host organisations and physiotherapy students

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have been explored, implemented and are currently undergoing evaluation. PjBL is a curricula model that centres learning on the design, development and implementation of contextually relevant student-led projects. These are considered to be relatively complex tasks, requiring synthesising and problem solving around challenging questions or problems, where the student is at the centre of the design, decision making and evaluation to produce a tangible product or solution.

Importantly, PjBL tasks give students the opportunity to work in a leadership role, over varying periods of time, yet require the student to undertake high levels of collaboration and consultation with a range of stakeholders. This includes guidance and input from others including staff, management and patients of the host organisation. Of particular benefit to the host organisation, the student is able to consider the project through a strong context and industry-specific lens, culminating in the opportunity to deliver meaningful and tangible solutions to real problems through products, resources, presentations, services or quality assurance activities. Projects allow students to more fully understand how their clinical placement host organisation fits within the wider healthcare context and allows them to more thoroughly understand the needs of the stakeholders, in particular, patients and staff. For this reason, PjBL is often synonymous with or includes service-learning, however, the culmination of a tangible outcome, solution or product often sets it apart (Jones, 2015).

As a student-led pedagogical approach situated within a clinical education framework, projects should be developed in partnership between student and host organisation. Individual students, or groups, depending on the placement, may lead all or parts of the design, decision-making, problem-finding, problem-solving, discovery and solution building processes. However, in order to truly be considered a PjBL project, the central activities of the project must involve the transformation and construction of knowledge on the part of the student (Thomas, Mergendoller, & Michaelson, 1999). PjBL is thus a form of situated learning and is based on the constructivist view that students gain a deeper understanding of the material, context and professional practice when they actively construct their understanding by working with and using ideas. In PjBL, students engage in real, meaningful problems that are important to them and their context of learning, in this case, their clinical placement host, site, and stakeholders.

PjBL has four key features (Blumenfeld et al., 1991) that can be adopted as a framework to help students co-design projects with their host organisation specific to their clinical site. This framework has been adopted and modified for UQ physiotherapy host organisations to introduce new, or expand existing projects in 2020 in response to concerns that student learning requirements may not be supported given significant reduction in physiotherapy service provision. This framework is outlined in Table 1 (see page 3), each with an example illustrated from a current participating host organisation.

Table 2 (on pages 3-4) outlines other PjBL activities that have been used across clinical placement host organisations in partnership with hosted students and the university. This table

further outlines the proposed learning benefits for students from various adopted projects.

Discussion

Early evaluations from our physiotherapy host organisation partners at UQ suggests there is an uptake of PjBL activities following the introduction of a framework and practice examples and direct support for implementation. Importantly, this has provided some host organisations with the ability to supplement student learning in order to continue to provide full-time placements during Covid-19 restrictions in Australia. Evaluation of student experiences are currently planned for mid-late 2020. Evaluation is centred in an action-research evaluation framework (Akhilesh, 2017) at key host organisation sites with a long term view of quality improvement. Other measures include student placement performance measures, qualitative information from students, host organisations and their clinical education staff gathered through focus group measures.

Within the current clinical education climate, which has been exacerbated with the advent of Covid-19, the possible inability of physiotherapy students to graduate with sufficient clinical experiences may have a marked impact on our future workforce. This will be especially felt in areas that traditionally have had difficulty in attracting and retaining staff. This may also have a knock-on effect in 2021 and beyond where clinical education capacity may not extend further than the 2020 cohort. Building and sustaining capacity in clinical education where possible through flexible approaches such as PjBL may act to minimise these effects on current and future cohorts and providers. Furthermore, these approaches provide additional opportunities for students to meet professional and performance requirements of their clinical education setting.

This is only possible with close partnership with individual host organisations and the sector as a whole, with a shared goal of activities and strategies that situate student learning at the centre, with shared benefits for host organisations. Thus, for clinical education models to keep pace with an ever-changing health landscape, innovation in clinical education and a re-thinking of what constitutes effective student learning in clinical education must be proposed, trialled and supported through effective partnership. Now, more than ever, this approach will ensure our host organisations are sustained as a valuable ally in the education of our future workforce.

Table 1: Key features of project-based learning with a physiotherapy private practice example.

Key features of project-based learning	Case Study Example “Community resources for patients – private practice project” completed by a final year physiotherapy student during their 5-week full-time placement over 4 hours per week.
1. Project-based learning starts with a driving question, or problem to be solved.	Guiding problem: Patients within a local private practice clinic often seek information from their physiotherapists about how and where to access services, supports or community resources to manage physical activity and further health services. Private practice physiotherapy staff and their patients are not aware of local community centres, support networks, or other community resources in their area. They realise that having knowledge and access to these services may help their patients manage their long term health or chronic conditions through physical activity, access to resources, community engagement and local support.
2. Students explore the driving question by participating in authentic, situated inquiry – processes of problem-solving that are central to expert performance in the discipline.	The student considers the importance of locating and providing resources to assist patient care within the host organisation from the perspective of all stakeholders. Students start the project by undertaking an assessment of users’ needs including staff needs from a resource repository and patients’ needs regarding knowledge of, and access to, community resources. The student finds out from patients that access to facilities and services to support their physical activity and community contact would benefit their health maintenance planning and community engagement. Through working with staff, the student recognises that a resource repository with easy access to community resources and contacts for long term patient management would be an asset to the practice, staff and their patients receiving care.
3. Students engage with others in collaborative activities to find solutions to the driving question. This mirrors the complex social situation of expert problem-solving.	The student explores potential resource frameworks in collaboration with existing staff and patients. The student finds out that staff would prefer a digital repository within the clinic database that outlines key local services, contact lists, websites, and locations. The student may trial different platforms and presentations to select the most appropriate dissemination strategy for their proposed resource repository. The student uses different approaches to explore community resources and activities and undertakes a critical analysis of the value of these resources and networks for the unique host organisation setting and its stakeholders.
4. Students create a set of tangible products that address the driving question. These are shared artefacts, publicly accessible external representations of their learning.	The student creates, delivers and evaluates a resource repository for their community resource project. If time permits, the student evaluates the up-take of this resource over the final week of their full-time placement. The student develops a quality assurance and improvement measure for the clinic where the use of the resource repository can be monitored over time for continued evaluation.

Table 2: Additional project-based learning activities and benefits to students.

Project type	Example	Potential benefit to the student
Patient resource projects	Development of patient take-home educational resources to support in-person delivery of physiotherapy.	Students learn about existing resources online and may learn about the management of conditions specific to the organisation.
	Online resources including blogs, patient educational resources, advertising or marketing material.	Students learn about how to tailor information for an online resource. Students need to consider health literacy in the development of resources.
Staff resource projects or resource repositories	Development of staff in-service activities, presentations or journal club.	Students work on ‘knowledge translation’ to take research and consider how it can be applied to physiotherapy care.
	Development of clinical case studies for staff learning and development.	Students learn about the importance of continuing professional development in physiotherapy practice and ways in which this can be delivered.
	Development of clinical guideline repositories for the organisation.	

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	Development of exercise resources or development of other products including videos to support patient care.	
Service development projects	<p>Development of a new exercise or group based class.</p> <p>Development of a new triage service.</p> <p>Development of phone or tele-rehab based patient advice or follow up service.</p> <p>Development of home visit service</p>	<p>Students gain experience using frameworks for service development that can be used throughout their careers to support strategic decision making. This may occur when opportunities arise to develop a service, lead a team or contribute to projects.</p> <p>Students are encouraged to strongly consider stakeholders of the organisation.</p>
Quality improvement or service evaluation projects	<p>Quality assurance investigation of existing service or clinical activity.</p> <p>Development of quality assurance or service evaluation survey.</p>	<p>Students learn about the value and operation of services available and their outcomes within the organisation.</p> <p>Students learn about the importance of evaluating services from different perspectives.</p>

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Peer review reports

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