



Trinity College Dublin

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin

**Quality Review of the joint B. Sc. (Hons) in Physiotherapy,
Singapore Institute of Technology (SIT) and Trinity College Dublin**

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Table of Contents

1.	Reviewers' Report	1
2.	Joint response from TCD and SIT	13

1. Introduction and context

The Singapore Institute of Technology was established in 2010 by the Ministry of Education in Singapore. It obtained university status in 2014 and became the fifth publicly funded university in Singapore. Singapore Institute of Technology is also the first University of Applied Learning and the third largest university by intake in Singapore. Singapore Institute of Technology now offers over 40 specialised degree programmes. With a strong emphasis on applied learning, the Singapore Institute of Technology education programmes aim to prepare the graduates to be work-ready professionals and lifelong learners.

Ministries of Health and Education in Singapore identified the need for diploma graduates in healthcare disciplines to upgrade their education to acquire the knowledge and skills required to meet the demands of the health industry and become future leaders in their fields. Subsequently, a one-year degree conversion programme for diploma holders in Physiotherapy commenced in September 2012. Following the success of this programme, the senior management team of Singapore Institute of Technology explored future possibilities for establishing a joint degree programme in physiotherapy with Trinity College Dublin, the University of Trinity College Dublin, which offers its own BSc in Physiotherapy programme, a four-year honours degree which is accredited by the Irish Society of Chartered Physiotherapists.

The official agreement for the joint degree programme between Singapore Institute of Technology and Trinity College Dublin was signed in January 2016. Both partner institutions contributed to the formulation of the programme's aims and intended learning outcomes, and design of the curriculum. A four-year joint honours degree in Physiotherapy commenced in September 2016. According to the Agreement, the student enrolment number should be 100 for the first intake and increased by 20 annually to reach 180 for the 5th intake in the year of 2020. The period from 2021-2024 is the "teach-out" period.

This is the first quality review of this joint Degree in BSc (Hons) Physiotherapy programme. The review was originally scheduled in March 2020 but was postponed because of the Covid-19 pandemic.

2. Executive Summary

The Singapore Institute of Technology-Trinity College Dublin joint degree programme in physiotherapy is a comprehensive one delivered by highly qualified faculty staff from both institutions involved. Evidence of its quality is reflected through its accreditation of this programme. However, four major themes to improve the programme were identified from discussions with staff, students, clinical educators, and employers. Other recommendations are included further below.

1. To address the **very full curriculum**, recommendations include:
 - Map the programme against accreditation requirements and delete units that are superfluous to requirements. Some content can be embedded within other modules.
 - Map content such as 'gait' and 'exercise' to identify where duplication occurs and remove it from the curriculum.
2. To address students' **preparedness for clinical placements**, recommendations include:
 - Introduce a small clinical, embedded in one of the existing units in the first year, to prepare students for the acute care hospital environment.

- Provide blocks of time and space appropriately resourced (e.g. plinths) for students to practice skills outside of the scheduled classes.
 - As students perceive that only practice on the 'standard patients' is 'authentic' and are dismissive of therefore practicing on each other, the use of "standard patients might be better employed in consolidation of skills such as in PTY3009 Clinical Decision Making for Patients with Complex Health.
 - Develop non-MCQ assessments that focus on students' clinical decision making and communication skills (whilst drawing on anatomy, physiology, and other underpinning units).
 - Increase the credit points of PTY3009 Clinical Decision Making for Patients with Complex Health Issues to 10 credit points and include cases from all three core streams.
3. To address issues around **rollout of the research component**, recommendations include:
- Integrate the process of evidence-based research processes within a first-year unit of study (e.g. PTY1008 Musculoskeletal Physiotherapy).
 - Decide the thesis research topic early in the programme so that the students have more time to plan (i.e. formulation of proposal, ethics application, etc.) and implement the project (i.e. data collection and analysis, etc.) without having to undertake the project work while on clinical placements.
 - Streamline the rollout of the research component. By allocating students' their research topic earlier in the programme, PTY3004 (Scientific Writing) and PTY3801 (Honours Thesis Proposal) can be integrated, so that the students can write a single literature review on what will be their topic of investigation, as part of the preparation for the Honours Thesis
4. To addresses **issues around assessment**, recommendations include:
- Reduce the overall number of assessments by consolidation and reduction of the number of modules.
 - Match the assessment to the objectives of modules, following review and revision, where necessary, of the objectives to include more high order thinking skills.
 - Scaffold assessments around development of skills such as writing and interpreting the evidence.
 - Include formative assessment for all units, in which all students receive feedback about their performance from these formative assessments.
 - Recruit an academic with expertise in assessments to assist in development of quality but efficient assessments to address issues raised by clinical educators.

3. Terms of Reference:

3.1 Assessment on the effectiveness of the Joint Degree in Physiotherapy in the context of its joint delivery by Trinity College Dublin, University College Dublin and Singapore Institute of Technology in accordance with the Agreement signed in November 2015.

Overall, delivery of the joint degree in Physiotherapy was achieved by the two institutions. It was developed in which Trinity College Dublin contributed 25% of content whereas 75% was contributed by staff from Singapore Institute of Technology. In the period prior to the enforced lockdown, this required Trinity College Dublin staff to deliver their modules on-site in a block

mode over a 2- to 3-week period with no other contributions to teaching. However, this has led to two 'streams' of delivery, with limited (if any) integration between the two streams.

One of the areas in which the presence of the two streams is highly noticeable is around the delivery of research and honours. To achieve the appropriate workload distribution for each institution, students undertake a literature review and develop a proposal under the guidance of the Trinity College Dublin staff but then undertake their honours project including writing of the project under the guidance of the Singapore Institute of Technology staff. A coordinated approach in which students commence work on the literature review and proposal related to their project would reduce the burden on students, particularly during the period when they are on clinical. It is not fair to the students if they are required to work on their research projects whilst on their clinical units.

Another impact from the delivery of the two programs relates to the concentrated blocks from Trinity College Dublin. Modules are weighted towards lectures rather than practical classes with high volume of content delivered over a very short period. For example, PTY2008 Enhance Human Performance by Exercise comprised 16 hours of lectures and 4 hours of tutorials, delivered over a two-week period. Another example is PTY2012 Creative Thinking and Innovation in Health, which involves 30 contact hours (including 21 hours of lectures) delivered in a 2-week period. This concentrated approach does not provide opportunity for students to review and reflect on content.

A couple of areas of missed opportunities were also identified in this review. From the outlines provided, it appears that modules coordinated by Singapore Institute of Technology staff are delivered by Singapore Institute of Technology academics, and similarly, those delivered by Trinity College Dublin staff are delivered by Trinity College Dublin academics. An integrated approach in which academics from both institutions teach into units coordinated by staff from the other institutions would provide an integrated programme and promote the spirit of co-planning and co-teaching between Singapore Institute of Technology and Trinity College Dublin staff. With the advances in technology as a consequence of COVID, this would not require academics to travel to the other institution for lectures as they could be delivered 'on-line'. The advantage of this approach is that it would also provide opportunity for staff to develop their networks, as part of their globalisation.

Another missed opportunity from this programme was around globalisation of the students from both the Singapore Institute of Technology programme and those from Trinity College Dublin. As both programs offer a 4-year physiotherapy Honours programme in which the content would be similar, one of the modules undertaken by students in both institutions could include bringing the students together in the classroom and potentially, working on a group assignment in which the impact of their perspective health systems would need to be considered. Such arrangement would increase the interactivity among students from the two institutions, thereby enhancing the internationalisation of the students' learning experience.

3.2 Assessment of the future direction of the programme in the context of both partners institutional strategies, internal and external developments and, when necessary, to facilitate large scale changes or discontinuation of the programme.

The formal agreement between Singapore Institute of Technology and Trinity College Dublin will be completed at the end of 2024. As such, without another agreement, this partnership will end. However, in alignment with both institutions' strategic plans, the two institutions may want to continue their collaboration under different terms. For example, as noted previously, co-teaching of selected modules by Singapore Institute of Technology and Trinity College Dublin staff in a live online format can be adopted. Different learning activities (e.g. breakout room discussion, etc.) and

collaborative assignments can be incorporated in the coursework to further foster the globalisation of the students.

As discussed below, the physiotherapy honours programme does achieve its aim in terms of delivering a programme that meets both national and international criteria for their physiotherapy graduates. We are confident that Singapore Institute of Technology academics can deliver the content that has been delivered by Trinity College Dublin and continue with this programme independently. In preparation for the shift towards the programme being delivered by Singapore Institute of Technology staff only, consideration needs to be given to staff from both institutions. For staff employed by Trinity College Dublin for this joint degree, there is uncertainty around their role at the end of Academic year 2023/24 and whether they will have a position within Trinity College Dublin. For other academics from Trinity College Dublin, consideration about their roles and responsibilities which they will take on within the Trinity College Dublin programme will need to be managed skilfully in order to be fair to both academics who have been contributing to the joint programme as well as those who focused on the Trinity College Dublin program.

From Singapore Institute of Technology perspective, we strongly recommend that planning for the transition to delivering the programme independently of Trinity College Dublin commences now to identify gaps for delivery of the curriculum needed to be filled, and recruitment of staff. Whilst this might occur with some efficiency for early career academics, if the plan is to recruit associate professors and/or professors, this process can be lengthy.

To continue to deliver high quality content by staff engaged in teaching and research, it is important to support staff to ensure they have opportunity to develop teaching resources as well as conduct their research. It was noted that staff from Singapore Institute of Technology who obtain grants can negotiate to reduce their teaching. However, to be able to be competitive for grants, the early career academics require time to develop their research track record. Theoretically, Singapore Institute of Technology academic staff are given one trimester free to undertake their research. However, staff report that this does not necessarily occur. Also, administrative activities such as interviews of potential students are costly in terms of the academic's time but questionable in terms of recruiting the 'right' student. Review of processes to reduce the hidden administrative burden would be timely.

Areas for growth for the partnership are around postgraduate education for graduates who would like to return to undertake a postgraduate research degree related to physiotherapy. One of the primary reasons to offer a Level 8 course is to provide students with a pathway to a postgraduate research degree. Currently, Singapore Institute of Technology offers two postgraduate degree programmes related to health sciences, namely, a Master of Clinical Research in Health Sciences, and a Doctor of Clinical Research in Health Sciences. These programmes involve both coursework and an industry-derived project which is jointly supervised by Singapore Institute of Technology faculty and industry supervisor. These two programmes are open to professionals from different healthcare disciplines, rather than gearing toward specialization within the physiotherapy profession. Potential areas for further growth of partnership may involve the development of joint master's degree programmes that are tailored for specialization (e.g., musculoskeletal physiotherapy) and a PhD programme. A few of the graduates we interviewed did express an interest in returning for further study.

3.3 Review of the curriculum and comment on the academic standards, the appropriateness of the programme learning outcomes and alignment with a Level 8 Award on the National Framework of Qualifications.

Testament to the quality of the joint programme in achieving standards Level 8 award is from the reviews undertaken by Quality Assurance Framework as well as the Allied Health Professional Council accreditation (2019). The programme has a number of strengths, including an international

experience for students, in which they travel to Trinity College Dublin, supported by a team of professional and academic staff from Trinity College Dublin and Singapore Institute of Technology. The feedback from students on this activity was excellent.

From the review of the Student Handbook and examination of timetables, it was clear that the curriculum is very full, without giving the students sufficient time to consolidate new information and to practice skills. In addition, the very full curriculum results in students being required to work on their thesis whilst on clinical placements. As a consequence of the curriculum and related assessments, students report they are 'burnt out' by the end of their fourth year.

One of the reasons the curriculum is very full is the **duplication of information** taught within the programme (e.g., around 'exercise', gait analysis) and the inclusion of modules that may be peripheral to the criteria for accreditation. To minimise duplication, we would recommend that mapping is undertaken to identify where related content that is covered across modules is taught to ensure that it is covered, but only once. For example, it would appear that content taught in PTY3002 Clinical Exercise Prescription is also covered within PTY1007 Kinesiology, PTY1009 Exercise Physiology, PTY2006 Cardiopulmonary Rehabilitation, and PTY2008 Enhance Human Performance by Exercise. The credit points from PTY3002 could be distributed to other modules, including the undervalued complex cases PTY3009 Clinical Decision Making for Patients with Complex Health Issues.

PTY3009 Clinical Decision Making for Patients with Complex Health Issues was identified as one requiring greater number of credit points as it is the area in which clinical educators and employers both flag as a weakness of students. Students struggled with applying the theoretical knowledge to cases in the clinical environment, and to consider the psychosocial component within their overall assessment. Year 3 students reported feeling unprepared for placements that focus on 'conditions' from the first year of their program. We would therefore recommend that cases that include patients with common conditions from each of the three core physiotherapy areas be explored within this module and to provide time and direction on referring back to content taught in the first year of their programme to plan their assessments and possible interventions.

Manual handling skills were reported by both the clinical educators and employers to be at a level lower than expected. Several factors may have contributed to this finding. First, the very full curriculum and assessment load does not provide much opportunity in which students can practice. Reduction of overlap and reduction of assessments would reduce the workload. Second, students report lack of access to space in which they can practice their skills. If this is the case, a room with appropriate plinths could be made available for student use. Third, students perceive that the use of standard patients is the only 'authentic' way to practice and were dismissive of practicing on each other. To circumvent this issue, it may be preferable not to use standard patients in the teaching environment, so that students can develop the underpinning skills whilst practicing on each other. The standardised patients might be appropriate for use in PTY3009 Clinical Decision Making in Patients with Complex Health Issues to consolidate their learnings prior to attending their first clinical placement.

One of our major concerns was around the delivery and workload for students associated with **the research component of their course**. As graduates, it is critical that students can apply high order thinking skills with respect to research, i.e., interpret and critique the findings, and where applicable, apply the research to the clinical environment. An honours project provides them insight into the process.

- The first point to highlight is that as consumers of evidence-based research from the commencement of their program, students require basic skills to interpret and evaluate research findings. Students need to be aware of bias of research and the impact which it might have on the findings, understand and consider clinically relevant versus statistically significant evidence,

and able to interpret key data such as confidence intervals. These skills are different to research statistics, per se.

- The second point is the heavy load related to the research stream, commencing Year 2 and continuing to Year 4. The three units of study are PTY2011 Research Methods and Statistics (10CP), PTY3004 Scientific Writing and Investigation (5CP), and PTY3801 Honours Thesis Proposal (0CP) and PTY 4801 Honours Thesis Project (20CP). As shown in Figure 1 of the Student Handbook, this Honours Thesis component is being undertaken at the same time as Clinical Practice Education.
- In PTY3004 (Scientific Writing), the students are required to either conduct a literature review on a topic that is not necessarily related to their subsequent Honours Thesis Project (PTY4801). Later in the programme, the students are required to conduct another literature review and formulate a proposal for their thesis research project in PTY3801. No credit point is allocated to PTY3801, despite the substantial amount of work involved.
- The third point is the feedback of these units by students, albeit only 20 students responded to the request for feedback.
- We recommend that the research stream be reviewed to integrate the process of evidence-based research processes within a first year unit of study (e.g. PTY1008 Musculoskeletal Physiotherapy). Review of the outline of this unit suggests that there will be overlap within the module as each joint is considered separately. A shift to focus initially on principles which are then applied to different joints could free up some of the hours to examine evidence-based practice. Second, we recommend that students are allocated their research topic earlier in the programme, prior to the unit on scientific writing. This would provide the students with more time to undertake the thesis project without having to work on it while on clinical placements. In addition, PTY 3004 (Scientific Writing) and PTY3801 (Honours Thesis Proposal) can be integrated so that the students write a single review on what will be their topic of investigation, as part of the preparation for the Honours Thesis. Third, delivery of the units needs further consideration to address the feedback given by the students.

Strengthening of some content is recommended, based on the changing field of physiotherapy. Physiotherapy practice has shifted from primarily hospital-based to that of primary care and community. Some areas, such as mental health and disability have only received a token mention. In addition, a lifespan perspective on physiotherapy management of people with developmental conditions (e.g., Intellectual disabilities) is now recommended, as these persons now have much longer life expectancy than previously, and premature aging is a real issue. The units in which these topics might be expanded are PTY3003 Physiotherapy across Lifespan (Child and Maternal Health) and PTY3007 Physiotherapy across Lifespan (Older Adults).

Review of inclusion of some modules within the curriculum is recommended and would need to be considered with respect to accreditation. These units include PTY2012 Creative Thinking and Innovation in Healthcare, HSC4003 Professionalism, Ethics and Global Health – An IPE approach and PTY4002 Professional and Interprofessional Education. The key elements of these units could be embedded within other modules, allowing for broader content to be covered but without additional assessment burden. For example, rehabilitation technology could be introduced within Neurological Physiotherapy.

The Programme Learning Outcomes are focussed on ‘skills’, with an emphasis on lower order thinking skills. A review of these outcomes, in consideration with Bloom’s taxonomy, would facilitate greater inclusion of higher order thinking skills to reflect what would be expected as a Level 8 qualification. For example, one programme learning outcome is to ‘Plan and implement therapeutic programme ...’. In consideration of higher order thinking skills expected of a new graduate, we would recommend inclusion of ‘evaluate’ – i.e., plan, implement and evaluate....

Another specific issue within the learning outcomes is related to Outcome 8: ‘Critically evaluate scientific findings, formulate research questions, select appropriate research methods, analyse and interpret research data.’ However, the majority of students need to be consumers of research. As a new graduate who has undertaken one supervised research project, it would not be expected that they could formulate research questions without guidance. We recommend rephrasing this outcome to reflect high order thinking in the application of research findings.

Review of the module outcomes is also recommended, particularly for the first and second year units. These outcomes should be measurable achievements, reflected by assessments. One of the common approaches for development of outcomes is through the use of Bloom’s taxonomy. Scaffolding of expectations can be build using this form of approach to development of outcomes.



Bloom’s Taxonomy

LEARNING OUTCOME VERBS



American University CTRL Taxonomy diagram created by Erin Horan, Kim Westemeier, and Alexis Arnold at American University's Center for Teaching, Research & Learning is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike](https://creativecommons.org/licenses/by-sa/4.0/) license. American University CTRL Bloom's Taxonomy.

3.4 Review of and comment on the quality of Teaching and Learning on the programme, the integration of research-led teaching and assessment, and the quality of the student and health partners experience of the clinical placements component of the programme.

Review of student feedback indicates that students are highly satisfied with the quality of teaching of the core units. As flagged above, the research-related components are not viewed as favourably by students. However, students’ responses were low. This is not a unique situation as many institutions experience this poor response. Some strategies, such as providing time in class to complete the forms has been trialled but with limited success. Student feedback is an important

component of reviews. One suggestion to obtain feedback is the use of group interviews at the end of the semester/year, facilitated by an academic external to the physiotherapy and broader teaching program. The students could provide feedback on all modules, indicating what were the strengths and where improvements could be undertaken.

Clinical educators' and employers' feedback

Feedback from the clinical educators regarding students from this joint degree were around their ability to apply knowledge gained from their theoretical units (e.g. anatomy, kinematics) to patients, including exploring the psychosocial factors that may impact treatment strategies. Other aspects that some educators and employers reported that students experienced some difficulty with were their time management, communication, clinical reasoning and manual skills. Employers also commented on the difficulty with which students accepted their change in role from being a student to being a new graduate.

One of the recurring themes from students and educators was the timing of clinical placements. No formal introduction to the hospital environment occurred until third year. Both the clinical educators and students reported being overwhelmed at this first placement, and not feeling comfortable within this environment for a couple of weeks. One strong recommendation is to introduce students to the hospital environment early in their program. It is not recommended to add another unit but to embed this experience within one of the other modules, e.g. Kinesiology, Musculoskeletal Physiotherapy. This would be, for the most part, a short placement (a few days to a week), in which students would observe a clinician to whom they were attached, and undertake a small assignment, linked to the content covered in the module to which it was attached, e.g. observe the gait pattern of patient, undertake range of motion measurements, interview a patient. The benefit of this early introduction to the clinical environment is two-fold. First, it would reduce the stress of working in a hospital environment, and second, it would emphasise the point that the content taught within the classroom is critical to informing clinical practice. Apart from the introductory placement mentioned above, it is recommended that clinical observation sessions involving real patients in various clinical settings be incorporated into various modules (e.g., PTY2001 Cardiopulmonary physiotherapy, PTY2007 Chronic Disease and Rehabilitation, PTY2013 Neurological Physiotherapy 1, etc.) to further reinforce the principles learned in the classroom settings and translate them to clinical practice. These clinical observations could be achieved with videos to reduce the administrative burden. In this way, the students should have a reasonable level of exposure to the clinical environment prior to the first "formal" clinical placement.

The second recommendation is to review placements of the clinical modules and expectations of students aligned to each module, with clear expectations of the clinical educators. The challenge with any physiotherapy programme is to determine where to place clinical placements. The clinical component of this joint programme commences mid-way through the third year and continues through to the fourth year. This may be, in part, due to logistical component of block mode to enable the Trinity College Dublin component to be taught. We recommend review of the placements with consideration given to moving one clinical module from third year to second year, with emphasis that this has different assessment criteria as it is the first placement. In addition, expectations of the educator at this first placement would differ. In contrast, the final placement should have a higher standard as this is their last placement demonstrate their 'readiness to practise as an entry-level clinician. Within the final placement, students' readiness to take on entry-level practitioner roles, including a higher workload than previous placements, could be introduced.

Assessment and Feedback

Review of the assessment component identified several issues:

- There is a high assessment load for students, due to the number of modules student undertake each semester, with each module employing multiple pieces of assessment. This issue has been raised previously by the external examiners.
- There is a high volume of multiple choice exams for assessment of both core physiotherapy units (e.g MSK, Neuro, CP), as well as for related topics such as anatomy and physiology.
- The use of MCQs do not necessarily match the objectives of the unit or develop skills for future clinicians, e.g. clinical reasoning, which, as flagged above, is an area over which educators and employers have raised concern. Feedback from clinical educators was the lack of correlation between students' GPA and clinical performance.
- Employment of 100% assessment or assessments close together such that there is not opportunity for students to receive feedback (e.g., PTY3007 Physiotherapy Across Lifespan (Older Adults), PTY2007 Chronic Disease and Rehabilitation).
- It was reported that only students who fail receive formative feedback about their performance.

Based on these issues, we have several recommendations to make.

First and foremost, the assessments need to reflect the objectives of the unit to which they are attached. For example, if an objective is to develop clinical reasoning skills, short and long answer questions or viva's can be used to explore their reasoning.

Second, volume and types of assessments need to be reviewed horizontally and vertically to ensure that skills and knowledge are being developed but not over-assessed. This will also provide opportunity to scaffold thinking skills. For example, in the first year, the focus may be on development of low order thinking skills where students gain knowledge. In these instances, MCQ's would be highly appropriate. However, for later years, the higher order thinking skills around applying knowledge, evaluating outcomes, and so forth can be developed. A range of assessments can be employed to assess higher order skills, including vivas, short and long answer questions, seminar presentations, reports, infographics, and so forth.

Third, from a pedagogical perspective, formative assessments are critical. It is important that students receive feedback from their assessments to identify what were their weaknesses and their strengths. For example, a student may perform well in the execution of a skill but have poor communications skills. Targeted feedback from the assessment will help them to improve their performance in future. Careful design of rubrics that illuminate strengths and weaknesses of different aspects to assess will be provide efficient but effective direction for students.

To assist in addressing the issues around assessment, we recommend recruitment of an academic expert in assessment design to assist physiotherapy academics in development of assessments that are of high quality in assessing what they are meant to assess but in an efficient manner.

4. Other comments.

One of the issues that was raised by the students, clinical educators and employers was around students' mental well-being. Covid 19 appears to have had a significant impact on students, with some students raising their mental health issues with their clinical educators and with potential employers. Hopefully, this issue will resolve as we return to face-to-face teaching, but it will be important to monitor going forward. Their stress levels and burn out at the end of fourth year may also be a reflection of their high work and assessment load. By addressing the curriculum and assessment volume, some of their anxiety may also be resolved.

5. Conclusion

Overall, the Singapore Institute of Technology -Trinity College Dublin joint degree programme in physiotherapy is a very comprehensive one delivered by highly qualified faculty staff from both institutions involved. The students of this programme are keen learners who strive to achieve excellence, as evidenced by the feedback from the employers and clinical educators. The overall academic performance of the students and quality of their work are very good. The core areas that are pertinent to entry-level physiotherapy education are all covered in the curriculum, although certain areas need to be strengthened to reflect the changing and emerging trends in physiotherapy practice. The intended learning outcomes of different modules should include increasingly more higher order skills as students progress through the programme. Certain modules/streams need to be restructured to avoid duplication of content, and to free up more time for students to consolidate the knowledge learned. Such restructuring would allow for re-allocation of certain credit hours to focus on students' clinical reasoning, manual handling and communication skills, and management of complex patient cases, which are identified by clinical educators and employers as areas for improvement. The concept of evidence-based practice and the competencies involved in being a critical consumer of scientific literature need to be introduced early in the curriculum. A short introductory placement introduced early in the programme is strongly recommended to familiarise the students with the hospital environment and to facilitate the translation of knowledge learned in school to real clinical scenarios. The assessment methods used need to be re-examined to ensure that the students are not over-assessed, and that the competencies described in the intended learning outcomes are effectively captured. As it is expected that Singapore Institute of Technology will offer the BSc Honours Programme in Physiotherapy independently after 2023/24, it is essential that the planning for the transition commences as soon as possible, particularly in relation to recruitment of staff and refinement of the curriculum.

The review team would like to congratulate those who are involved in the planning and implementing this joint physiotherapy programme. The programme has certainly produced competent physiotherapists who have made a positive impact on the society. We anticipate that the impact will be expanding as the programme continues to evolve and improve in quality.

**Response to the Quality Review of the joint BSc Physiotherapy, Singapore Institute of
Technology and Trinity College Dublin**

Introduction

Thank you for report of the Quality Review of the joint BSc in Physiotherapy which is a joint degree between Singapore Institute of Technology (SIT) and the University of Dublin, Trinity College (TCD). This response is a joint response from both institutions. SIT was established in 2010, by the Ministry of Education in Singapore, as an umbrella group for the polytechnics in Singapore. In 2014, SIT obtained university status and is the fifth publicly funded university in Singapore. The academic partnership, commenced in 2012 with one-year programmes with recognition for prior learning in Physiotherapy and Occupational Therapy and programmes in Radiation Therapy and Diagnostic Radiography commenced in 2014. These have now ceased. In September 2016, a four- year joint degree in Physiotherapy commenced, with Trinity providing teaching on 25% of the credit value of the programme and SIT providing 75% of the credit value. This present joint degree in Physiotherapy will finish in 2024.

Both partners believe that the collaboration has been positive for the students who have already qualified as physiotherapists and those students who have still to qualify. It has also been beneficial for staff in both institutions. In the report on the programme and partnership, the reviewers commended the quality of the programme and in their conclusion, they make mention of the comprehensive nature of the programme, the very good academic performance and quality of work of the students.

Recommendations

The reviewers made recommendations in four main areas on the

- Curriculum,
- Preparedness for clinical placements,
- Rollout of the Research component and
- Assessment.

With less than two academic years remaining of the programme it will be challenging to implement some of the recommendations. Indeed, if the review had not been delayed by COVID 19 (originally planned May 2019), many of the recommendations could have been implemented and incorporated into the programme. The recommendations that may not be implemented in time, will however

provide SIT with useful issues to explore, as they now offer their own BSc Physiotherapy (without TCD involvement), the first intake of which commenced in 2021. A short discussion of each of the area identified follows but more details will be included in the implementation plan at a later date.

Curriculum

Both institutions acknowledge with the reviewers' comments about the very full nature of the programme and are committed to examining ways to relieve some of the impact of the full curriculum on the students by exploring the suggestions that have been made and incorporating any possible changes into the final two years of the joint degree. With the harmonisation initiatives of the SIT degree programmes in 2021, credit redistribution and workload of the new SIT PT BSc Physiotherapy programme have been re-aligned according to SIT's guidelines.

Preparedness for clinical placement

With regard to preparedness for clinical placement, the recommendation of the placing of Year 1 students in the clinical environment is an excellent idea. The logistics surrounding this are however difficult as clinical placements are already under significant pressure. It is an idea that has been explored and will continue to be explored. Due to the time constraints this recommendation will not be of benefit to the joint programme but will be for the SIT BSc Physiotherapy programme. Working within the constraints, the programme currently offers students early exposure to the clinical setting through service-learning components embedded within modules. Recognising the pressures faced on the clinical front and also the value for students to gain early exposure, the programme has worked with clinical partners to offer volunteering and work exposure opportunities that are not part of their formal curriculum for students who are interested. There was also an issue highlighted in relation to the lack of space for students to practice. Students currently can book lab resources for self-practice via the Lab Resource Booking system. A classroom (AP-SR1P) has also been converted for lab self-practice for students. More facilities will be available when SIT moves to its new purpose-built campus in 2024.

Rollout of the Research Component

The rollout of the Research Component was also highlighted. The challenge here is that students are on clinical in the 1st Trimester of their final year and the research component is mainly in the final year. In the last two years delays to placement caused by the COVID 19 pandemic has exacerbated the situation and has meant that for some students their time for the research component has been negatively impacted. The academic partners will however examine how more of the workload for the Research Component could be brought into year 3 for the students who will

finish in 2024. In the SIT Physiotherapy programme, students will be given their honours thesis research topic in Year 3 Trimester 1.

Assessment

The academic partners are committed to examining the assessments as suggested in years 3 and 4 in the remaining programme. The intention would be to review the assessments in these years to ensure they reflect the objectives of the modules. Furthermore, a review the volume and type of assessments will be initiated to ensure that overassessment is reduced. With regard to formative assessments many of the modules in year 3 and 4 already have these in place but formative assessments in all modules of the remaining programme would be the intention.

The Partnership

The commitment to this programme from both partners has been very strong. The need to deliver teaching on all of these programmes has impacted on faculty's ability to engage in research. From TCD's perspective it was difficult to recruit staff who were suitably qualified and who were able and willing to spend significant blocks of their time in Singapore. The partnership however has been beneficial to both institutions at undergraduate level but one disappointment is that there have been no developments in the area of Postgraduate Education or Research. This latter factor is indeed reflected in the report of the reviewers.

COVID 19

One aspect of delivery of the programme that wasn't recognised in the review was COVID 19 which caused major disruption in all education institutions and programmes. The effect of COVID 19 on this programme was especially acute as the time difference between Ireland and Singapore (8 hours between October and March) impacted teaching, assessment and thus the student experience. Furthermore, this time difference was not conducive to any formal or informal review of the course.

The Health and Social Sciences Cluster in SIT and the School of Medicine in TCD are appreciative of the time and attention given by the Review Team and welcomes their comments as constructive. We will work together to produce a detailed implementation plan for the remaining time of the programme.



6th September 2022

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