The Program Guide summarizes what is taught and how teaching occurs in the entry-to-practice physical therapy.
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INTRODUCTION

The University of Manitoba works within a Departmental structure with Departments having defined authority. The Department derives its authority from its Department Council Bylaw and has a delegated authority from the College of Rehabilitation Sciences College Council. Academic programs can look very different across the University and have varying mandates, however in the case of the Department of Physical Therapy, the department is the Master of Physical Therapy program.

This Master of Physical Therapy (MPT) Program Guide (2019) is a foundational document in the Department of Physical Therapy. The guide encapsulates factors that influence what is taught and how teaching occurs in the entry-to-practice physical therapy program at the University of Manitoba. National and local environmental and contextual factors that help shape the department vision, mission, student attributes, values and curriculum content are described. The guide also explains how the components of educational theory and principles direct instructional design and educational strategies used in the 25-month MPT program.
ABBREVIATIONS

ACP: Assessment of Clinical Performance
CBE: Competency-based education
CCPUP: Canadian Council of Physiotherapy University Programs
CoRS: College of Rehabilitation Sciences
CPM: College of Physiotherapists of Manitoba
CRRC: Curriculum Review and Renewal Committee
IPC: Interprofessional collaboration
MEF: Matrix Evaluation Framework
NPAG: National Physiotherapy Advisory Group
OIPC: Office of Interprofessional Collaboration
OSCE: Objective Clinical Structure Evaluation
THE CONTEXTUAL FACTORS OF THE PROGRAM

There are several factors that provide context for the framework of practice and culture for which we prepare students in the MPT program (Program Guide, 2011). These contextual factors include the profession of physical therapy, accreditation, the physiotherapy regulatory body, provincial health care and the university.

The Physical Therapy Professional Context: Physical therapists (also known as physiotherapists) are self-regulated health professionals. The Canadian Physiotherapy Association (Canadian Physiotherapy Association, 2012) defines physiotherapy as a “primary care, autonomous, client-focused health profession” whose unique contribution to health care is to promote, restore and prolong physical independence by enhancing a client’s functional capacity. Physiotherapists encourage clients to assume responsibility for their own health and participate in team approaches to health service delivery. The physical therapist is dedicated to improving quality of life by:

- Promoting optimal mobility, physical activity and overall health and wellness;
- Preventing disease, injury, and disability;
- Managing acute and chronic conditions, activity limitations, and participation restrictions;
- Improving and maintaining optimal functional independence and physical performance;
- Rehabilitating injury and the effects of disease or disability with therapeutic exercise programs and other interventions; and
- Educating and planning maintenance and support programs to prevent re-occurrence, re-injury or functional decline.” (Canadian Physiotherapy Association, 2012)

The MPT program includes opportunities for entry-level students to become competent in the primary functions of the profession. These functions include:

- using diagnostic assessment procedures and tools;
• analyzing the impact of disease, disorders, injury or lifestyle on movement/function;
• developing and implementing preventative therapeutic courses of intervention;
• evaluating health status and advocating for the client;
• educating, consulting and researching;
• applying a collaborative and reasoned approach to help clients achieve their health goals, in particular focusing on the musculoskeletal, neurological, cardiorespiratory and the combination of multiple systems; and
• Lifelong learning (Canadian Physiotherapy Association, 2012).

Physical therapist practice in diverse areas including paediatrics, geriatrics, oncology, women’s health pain, critical care, wound care, occupational health and sports medicine. The practice settings include working in private and publically funded facilities, more specifically including “child-development centres, community health centres, government/health planning agencies, health clubs/fitness centres, hospices, hospitals, individual homes/home care, insurance companies, nursing homes/long term care facilities, occupational health centres, outpatient/ambulatory care clinics, physiotherapy clinics/practices/private offices, prisons, public settings of health promotion, rehabilitation centres, research facilities, seniors centres/residences, schools/universities/colleges, sporting events/field settings, sports medicine clinics, worksites/companies” (Canadian Physiotherapy Association, 2012).

Regulatory Body Context: Physical therapy (or physiotherapy) scope of practice is described in individual pieces of jurisdictional legislation. In Manitoba, physiotherapists are currently bound by the Physiotherapists Act (Government of Manitoba, 1999), soon to transition to The Regulated Health Professions Act (Government of Manitoba, 2009). Scope of practice descriptions articulate the range and boundaries in which a profession may function, but may not consistently consider the progress made in the areas of practice of the profession such as research, and education (Saskatchewan Physical Therapy Advisory Committee, 2013). The Master of Physical Therapy Program graduates are informed by the “practice standards/directions” and professional mores and expectations developed and shared by the
College of Physiotherapists of Manitoba (CPM) as well as national professional standards described in the National Physiotherapy Advisory Group (NPAG) Competency Profile for Physiotherapist in Canada (2017) and the Canadian Council of Physiotherapy University Programs (CCPUP) National Curriculum Guidelines (2019). The competency profile and curriculum guidelines in combination describe the knowledge, skills and attributes required to practice as a physical therapist. Physiotherapists are expected to “act in the best interests of clients and are committed to providing quality client-centred services and are expected to be knowledgeable of and comply with all standards at all times”, (College of Physiotherapists of Manitoba, 2016). The Continuing Competency Program of CPM encourages physiotherapists to engage in career-long competence-enhancing activities while also maintaining a professional portfolio (College of Physiotherapists of Manitoba, 2019) also the education program of Department of Physical Therapy, College of Rehabilitation, has as its primary purpose the preparation of entry-level physiotherapists who are capable of meeting the continuously changing demands of the healthcare environment. The entry-to-practice curriculum encompasses instruction in foundational knowledge and skills, clinical practice, professional interaction and a context of practice. This preparation develops students for a challenging and vibrant profession whose growth has been promoted through scientific inquiry and the emphasis on lifelong learning (Program Guide, 2011) in an ever-evolving environment.

Physiotherapy Education Accreditation Canada Context: The University of Manitoba Master of Physical Therapy (MPT) education program addresses CCPUP’s National Curriculum Guidelines content within the limitations of faculty and clinical community knowledge and expertise. The MPT program meets the Canadian Alliance of Physiotherapy Regulators requirement of 1025 hours of clinical practice for graduates of the program to be eligible for the Physiotherapy Competency Examination and complies with Physiotherapy Education Accreditation Canada Standards (2012). The graduates of the MPT program are entry-to-practice professionals with competencies that support safe and effective physiotherapy practice. The essential competencies include being an expert in function and mobility, communicator, leader, collaborator, manager, scholarly practitioner and professional within health care. These roles
support the obligation of the physiotherapists to the community, the members of the health team and the profession.

**The Manitoba Provincial Context:** The Ministry of Health identifies the socio-economic need for Publically-funded health services, and health delivery, including employment opportunities for physical therapists and the cultural context in which health profession education occurs, and the resource supports for such programs. The MPT program considers the health care needs and evolving environment within Manitoba when determining curriculum content and clinical education opportunities. The Health System Transformation (Government of Manitoba, 2017) budget initiatives launched a transformation of health care delivery systems across Manitoba. The MPT program continues to respond to meet clinical education student needs in this changing environment.

**The University of Manitoba Context:** Ongomiizwin (meaning clearing a path for generations to come) is the Indigenous Institute of Health and Healing, and was established in 2017 by the University of Manitoba Senate, building on the history of the JA Hildes Northern Medical Unit. Ongomiizwin upholds the University’s commitment to form respectful relationships and build pathways to Indigenous health, healing and achievement (University of Manitoba, Ongomiizwin, 2019). Ongomiizwin leads the implementation of the Rady Faculty’s Reconciliation Action Plan, 2018 in response to the Truth and Reconciliation Commission of Canada. The Action Plan, addresses themes such as, “honoring traditional knowledge and healing practices; providing safe learning environments; improving support and retention of Indigenous students; educating all students and faculty in cultural safety and anti-racism; and removing barriers to health professional education” (University of Manitoba, Ongomiizwin, 2019). The MPT program continues to develop curriculum that addresses the Action Plan relative to the practice of physical therapy.

The Office of Interprofessional Collaboration (OIPC) was established in the Rady Faculty of Health Sciences in 2015 in response to the growing body of literature supporting interprofessional education (IPE) in achieving collaborative practice (Reeves et al., 2016). Each
of the five Colleges has a representative seconded to the OIPC, mandated with providing interprofessional learning opportunities for nine programs: Dental hygiene, dentistry, medicine, nursing, occupational therapy, pharmacy, physical therapy, physician assistants, and respiratory therapy. Longitudinal interprofessional curriculum using blended learning techniques is grounded in the theoretical foundations of the National Competency Framework for Collaboration (Canadian Interprofessional Health Collaborative, 2010), Population Health Promotion (Public Health Agency of Canada, 1999) and Patient Safety Domains (Canadian Patient Safety Institute, 2009).
The Department of Physical Therapy strategic planning process is synchronized with the preparations for accreditation. The following table describes Faculty consensus on the department’s current and future Masters of Physical Therapy Program.

Table 1: The Department of Physical Therapy Vision, Mission, Student Attributes and Values (2018).

<table>
<thead>
<tr>
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<th>Department of Physical Therapy (2018)</th>
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<tbody>
<tr>
<td><strong>Our Vision</strong></td>
<td>To meet the changing health and wellness needs of all people by leading in education and research.</td>
</tr>
<tr>
<td><strong>Our Mission</strong></td>
<td>To educate student physical therapists, and to create and share knowledge through excellence in teaching, research, and service.</td>
</tr>
<tr>
<td><strong>Student Attributes</strong></td>
<td>At the completion of the MPT program, students will practice safely and competently, within a culturally competent framework informed by the population of Manitoba. Building on a foundation of evidence-informed practice, our students will have the courage and curiosity to engage in critical and reflective thinking, and to pursue lifelong learning and professionalism.</td>
</tr>
<tr>
<td><strong>Our Values</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Collaboration</strong></td>
<td>We learn and work in cooperation with students, the University and the broader community</td>
</tr>
<tr>
<td><strong>Accountability</strong></td>
<td>We deliver our program in a responsible and sustainable manner</td>
</tr>
<tr>
<td><strong>Integrity</strong></td>
<td>We treat everyone with fairness, and we respect diversity through ensuring equity of opportunity</td>
</tr>
<tr>
<td><strong>Excellence</strong></td>
<td>We provide exceptional student experiences by engaging with the scholarship of teaching and learning, and our communities</td>
</tr>
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THEORETICAL FOUNDATIONS OF THE CURRICULUM

Effective education and teaching are informed by theories of learning (Driscoll M. P., 2000). Educational Theories and principles help frame the current teaching and curriculum design strategies employed in the MPT graduate program. These relationships demonstrated in the Figure 1: Theoretical Foundations of the MPT program below:

**Educational Theories**
Existing educational theory may be categorized as behaviorist, cognitivist or humanist (Grassian & Kaplowitz, 2009) and emerging theories such as Constructivist Theory and Connectivist Theory also contribute to the teaching approaches in the MPT program (Yurkiw, 2019). The Social Cognitive Theory and Social Constructivist Theory combine concepts from other theories, and also inform the Masters of Physical Therapy program. The *Program Guide (2019)* describes
the key learning theories which support adult learning and have particular relevance to teaching graduate physical therapy students.

1. **Behavioral Theory:** Behaviorism stems from the work of Watson, Thorndike, Tolman, Guthrie, Hull and Skinner (Ormrod, 1995). The process of learning is based on three assumptions: observable behavior is the outcome of learning; behavioral change is a result of learning; and the “principles of contiguity (how close in time two events must be for a bond to be formed) and reinforcement are central to explaining the learning process” (Merriam, Caffarella, & Baumgartner, 2007). The instructor’s role is to organize the learning environment to stimulate the desired learning (Merriam, Caffarella, & Baumgartner, 2007). Examples of how Behavioral theory is put into practice are: providing instructional objectives, lectures, demonstrations, simulations (repetitive practice) and role playing. Controlled testing environments and multiple-choice formats also fall under this theory. (Yurkiw, 2019).

2. **Cognitivist Theory:** Cognitivism learning theory concepts were developed by Wertheimer, Kohler, Koffka and Lewin (Hergenhahn & Olson, 2005). The central theme with these concepts is that learning involves cognitive processes. Experiences activate the memory whereby the information from the experience is organized and accessed for interpretation (Merriam, Caffarella, & Baumgartner, 2007). “Essential components of learning are the organization of the information to be learned, the learner’s prior knowledge, and the processes involved in perceiving, comprehending, and storing information” (Gredler, 1997). The role of the instructor is to structure content of a learning activity (Merriam, Caffarella, & Baumgartner, 2007). Bloom’s Taxonomy (Bloom, 1984), which identifies cognitive, affective and psychomotor learning outcomes (Merriam & Bierema, 2014) is an example of how Cognitivist Theory can be put into practice. Other examples of applying this theory into teaching include using problem-based learning; small group learning, discovery activities (knowledge quests); and concept mapping.
3. **Humanist Theory:** The underpinning of this theory is that human beings grow and develop, and are free to decide on their behaviors (Merriam & Bierema, 2014). The goals of learning include self-actualization (Maslow, 1943) or becoming a fully functioning person (Rogers, 1961). The role of the instructor reflects a broader function to facilitate the development of the whole person (Merriam, Caffarella, & Baumgartner, 2007). Humanistic learning theory is the basis for andragogy or adult learning (Knowles, 1990) where the role of the educator is to help learners carry out their learning plans. Also included in the Humanistic approach are self-directed learning transformational learning (Mezirow, 1978). In transformational learning, learners review their own understanding of self, their belief system and behaviors. Critical reflection is promoted so that the learner questions the integrity of his or her own assumptions and beliefs based on prior experience (Taylor, 2000). Another aspect to reflection involves students evaluating their own learning, and adopting a lifelong learning approach. Schön’s (Schön, 1987) suggests that the learning of a student needs to go beyond the theories, principles and technical skills of activities in practice to include decision-making. This type of learning is enhanced through cases that add elements of variations on the principles and practices and complexity. Given the exponential growth of knowledge in health sciences and the flux within the health environment, it is essential that students have problem-solving skills. Problem solving skills are developed through the processes such as reflection-in-action (Schön, 1987). The use of reflection-in-action contributes students developing life-long learner skills. Driscoll (Driscoll, 1994) also developed a model of reflection which facilitates a plan for the learner to improve. Examples of how the Humanist Theory are put in practice include: professional portfolios, reflective journals, and debriefing after learning sessions.

4. **Social Cognitivist Theory:** This learning theory combines both the Behaviorist and Cognitivist theories, whereby learning is seen to occur where the individual is in a social setting, where the learner begins to see context e.g., social norms, rules, beliefs, attitudes, skills and knowledge (Merriam, Caffarella, & Baumgartner, 2007). Observational learning is influenced by processes including attention, retention, behavioral rehearsal and motivation.
The role of the instructor is to model and guide new responsibilities and performances (Merriam, Caffarella, & Baumgartner, 2007). Examples of how the Social Cognitivist theory is put into practice are: role modelling, demonstration, and goal setting (Yurkiw, 2019). Goal setting is another means of learning.

5. **Cognitive Load Theory**: Cognitive load theory assists instructional designers when presenting information in a manner “that encourages learner activities that optimize intellectual performance,” (Sweller, Merrienboer, & Paas, 1998). The goal of education is to help students develop a schema or, “pattern of thinking or behaving that organizes categories of information and the relationships among them (DiMaggio, 1997). A schema represents both knowledge and information-processing and is a mechanism that simplifies thinking (DiMaggio, 1997). The Cognitive Load Theory suggests that learning happens best when the learning environment supports the working memory or the temporary reservoir of information. The theory suggests that the reservoir in working memory is limited, but can be optimized by and reducing extraneous factors (or extraneous cognitive load). Setting up a learning session or the curriculum so that the learner does not have too many demands on working memory will assist in integrating learning into more permanent memory, and eventually develop critical patterns of thinking or schemas. In the MPT program, the *Conceptual Framework for Clinical Practice* provides a framework for critical thinking. Other examples of how the Cognitive Load Theory are put into practice are: promoting the learner’s attention to the primary focus of learning through specific styles of information materials such as presentations and instructional videos (Mayer, 2014).

6. **Constructivist Theory**: Similar to Social Cognitivist Theory, the Constructivist Theory borrows from a number of theories. The premise of this theory is that the learning is not a passive transmission from teacher to learner, rather, the learner constructs meaning from an experience (Narayan, Rodriguez, Araujo, Shaqlaih, & Moss, 2013). The role of the instructor is to facilitate the learner making meaning of the situation (Merriam, Caffarella, & Baumgartner, 2007). Examples of how Constructivist Theory is put into practice are: active
learning, critical reflection, learning journals, concept mapping, self-directed learning, role modelling and problem-based learning (Yurkiw, 2019).

7. **Social Constructivist Theory**: “Learning is jointly created by the learner and their social environment. Learners create new knowledge. The influence of these theories is seen in the authentic assessment movement, in which assessments are more closely tied to the learning environment. Examples of how the Social Constructivist Theory is put into practice are: collaborative learning, communities of practice, scaffolding, peer tutoring, portfolios (Yurkiw, 2019). Additionally, examples of classroom assessment practices that reflect this theory are: scaffolding (Narayan, Rodriguez, Araujo, Shaqlaih, & Moss, 2013), formative assessment (Scriven, 1967), portfolios, peer assessment and reflective diaries.” (Baird, Andrich, Hopfenbeck, & Stobart, 2017).

8. **Connectivist Theory**: Connectivism focuses on the learner’s ability to recognize connections, patterns and similarities, and to synthesize information (Dunaway, 2011). For example, information is presented to the learner, through their own information resources and technologies. The learner develops knowledge from making, “connections between concepts, opinions, and perspectives that are accessed via Internet technologies such as electronic databases, web search engines, and online information resources. Thus, connectivism acknowledges networked information technology as a significant part of learning processes”. (Dunaway, 2011). Examples of how the Connectivist Theory is put into practice are: networked learning (such as is outlined in the *Framework Information Literacy for Higher Education*).

**Educational Principles of Teaching and Learning**

Educational principles are values which may guide educational strategies and teacher behaviors. University teachers intend on providing good education to students, and this can be
accomplished through developing good practices of teaching. Chickering and Gamson (Chickering & Gamson, 1987) defined good practices for face-to-face undergraduate education in order to guide faculty students and administrators when designing courses and programs. The authors suggested that, “good practice in undergraduate education:

1. **Encourages contact between students and faculty:** There are a number of events that unite students and faculty together, for example: the welcome pizza lunch, Integrated Cultural Topic luncheon, the end of school year curling bonspiel, the Winter Formal, and Awards ceremonies.

2. **Develops reciprocity and cooperation among students.** Many instructors begin their courses with ice-breaker sessions. As students become more and more familiar with each other, more complex and focused teaching methods are implemented to develop student relationships. These methods include peer coaching, think/pair/share, small / large group discussion, and student to student feedback sessions. There are many group projects that encourage students to work with, about and from each other.

3. **Uses active learning techniques:** Aside from the psychomotor learning that occurs, instructors encourage brainstorming, “think/pair/share” discussions, researching case components and discussions concerning case studies or clinical cases, all to hone student critical thinking. Instructors design lab sessions to encourage student participation in simulation with actors and model patients to practice clinical skills. A number of courses have presentations as part of course assignments.

4. **Gives prompt feedback:** Students receive constructive feedback after all formative clinical assessments. Other teaching sessions such as standardized patient or model patient labs include debriefing sessions where self-reflection and feedback from instructors is included. There are some opportunities to view video recordings of the student’s own clinical performance after some labs.

5. **Emphasizes time on task:** Self-study time is provided (timetabled) for students for group work and preparation for certain activities. Instructors advised students to focus on learning objectives when prioritizing learning.
6. **Communicates high expectations:** Instructors provide details regarding assignments, assessments, due dates and marking rubrics. Standards of Professional behavior, professional appearance, and conduct are described in [Program Expectations](#) on the MPT Website.

7. **Respects diverse talents and ways of learning** (Chickering & Gamson, 1987): There are various educational methods or strategies used within courses and through the program. Students frequently work in groups that complement each other’s abilities."

A number of universities have adopted these principles and applied these to the regular classroom and distance/online learning contexts (e.g., [University of Tennessee of Chattanooga, 2019](#)). These principles can also be applied to the graduate level of teaching (Yurkiw, 2019).

In addition to adopting the above principles of teaching and learning, Faculty in the Department of Physical Therapy are encouraged to be reflective practitioners in clinical, administrative, educational and/or research fields. Each faculty member is expected to outline their teaching philosophies in writing and make these accessible to students on UM Learn.

**Instructional Design Strategies**

Instructional design is, “the practice of systematically designing, developing and delivering instructional products and experiences, both digital and physical, in a consistent and reliable fashion towards an efficient, effective, appealing, engaging, and inspiring acquisition of knowledge” (Wikipedia, 2019). Faculty continue to evaluate and refine MPT instructional experiences for students. After four years’ experience in the MPT program, Faculty recognized that students had a high degree of stress in the early months of the MPT program. The sources of this high level of stress include:

- The MPT program curriculum content is dense;
• Many students are exposed to new and different ways of learning (e.g., Motor learning, concept learning, rule learning and problem solving) in the MPT program compared to how they learned in their undergraduate program and
• It takes many months for students to recognize and appropriately apply established critical thinking pathways. Students are initially occupied with “learning about learning”.

The MPT program has evolved since 2012, and a number of instructional design strategies are currently used to make learning easier for students:

1. **Learning materials / activities are easily accessed for students:**
   a. **Materials are available 24/7** on the UM Learn Learning Management System. These materials include: Orientation materials (e.g., curriculum design, curriculum, practical and written assessment outlines); Course materials (e.g., notes, readings, announcements, assessments, assessment rubrics and grades); Year Syllabus for MPT1 and MPT2 (e.g., the *Conceptual Framework for Clinical Practice*, expectations on students and instructors, course outlines, etcetera); The timetable; and Teacher philosophies.
   b. **Learning sessions are scheduled to reduce student fatigue:** Self-study sessions are scheduled for the early morning or late afternoon to allow students to remain off site or leave early if they choose to work off-site. Student fatigue is high after written assessments therefore exams are scheduled Monday mornings, and very little if any course work is scheduled in the afternoon on those days.

2. **The number and timing of student assessments are considered.** Course coordinators strike a fine balance between providing adequate time for students to learn and assessing learning outcomes. The department attempts to adequately measure student knowledge, skills and behaviors without subjective student to continuous assessments which raise the level of student stress.
3. **Course construction aligns course objectives with learning session and assessment objectives**: Course objectives reflect cognitive/psychomotor/affective learning objectives at various levels of learning. Learning session objectives align with instructional activities and student assessments.

4. **A conceptual framework develops critical thinking**. The complexity of making a physiotherapy diagnosis, prognosis, treatment plan and then successfully carrying through to conclude the interaction requires knowledge, skills, behaviors and attitudes from a variety of sources. The *MPT Program Conceptual Framework for Clinical Practice* integrates various aspects of the curriculum involved in making clinical decisions about client (patient) engagement. This framework is introduced early in the MPT curriculum and used across many clinical skills courses throughout the program.

5. **Competency-based education (CBE) and formative assessments support learning**: The MPT program teaches students both concrete physiotherapy skills or competencies as well as conceptual knowledge / critical thinking skills. When teaching clinical skills, the program uses a *competency-based education* approach and encompasses four principles of CBE (Webb, 2018):
   a. Student skills, knowledge and attitudes advance when they are given several opportunities to clinically reason and apply skills;
   b. Explicit and measurable learning objectives are made clear to students who are expected to take responsibility for their learning;
   c. Assessment is a meaningful and positive experience for the student formative assessment is key. Assessment is used for learning as opposed to assessment of learning;
   d. Students receive rapid, differentiated support- students receive frequent, immediate feedback; and
   e. Learning objectives emphasize the application and creation of knowledge- application of knowledge and skills is key.
The MPT program competency-based education uses both a traditional teaching method where an instructor teaches skills to students and a peer teaching method where students teach skills to fellow students, after being initially being taught by an instructor. Refer to the Learning Clinical Skills document on the MPT website for more information on peer teaching.

Assessments of competencies or clinical skills, assist instructors track student learning throughout a course and throughout the program. Student assessments, in general, may be categorized into two broad classifications: formative and summative (Kulasegaram & Rangachari, 2018). Formative assessments do not provide marks to the student about performance however they do provide straightforward information about both what students learn and the effectiveness of teaching processes. Both students and teachers benefit from this information (Wass, Van der Bluten, Shatzer, & Jones, 2001). During the learning of a particular body system in the MPT program, students undergo formative assessments of their clinical competencies.

Summative assessments provide some assurance that a student has learned either knowledge, skills or attitudes. Student summative assessments usually occur during or at the end of a course whereby marks are attached to quantify learning. The summative clinical skills assessments, otherwise known as the Objective Clinical Structured Examination (OSCE) are used at the end of each clinical block of teaching, for example, the clinical skills associated with the neuromusculoskeletal system are assessed in March (MPT1); clinical skills associated with the cardiovascular pulmonary systems are assessed in October (MPT2) and clinical skills associated with the neurological system are assessed in March (MPT2). These assessments are described for students in the Learning Clinical Skills document and in the Clinical Skills Assessment Handbook (2019) for faculty.

6. **Competency levels are defined for both the student and teacher:** The NPAG Competency Profile for Physiotherapists in Canada (National Physiotherapy Advisory Group (NPAG),
2017) describe skills that are, “basic and represent the minimum level expected at entry-to-practice” (National Physiotherapy Advisory Group (NPAG), 2017). The statement “minimum level” was somewhat vague for educators to interpret, therefore the Department of Physical Therapy adopted a model of skills acquisition to better define expectations for both students and instructors. The MPT program borrowed from several models of learning (Benner, 1982) (Hammick, 2000) (Dreyfus & Dreyfus, 1980) to define the Department’s own Model of Skills Acquisition (2018). The model describes the expected clinical skills level of a student given certain landmark times in the academic program. Implicit to this model is that student knowledge and skills are built upon in a step-wise and planned manner.

Table 2: Model of Skills Acquisition and Beyond

<table>
<thead>
<tr>
<th>Level of Learning</th>
<th>Point in Time</th>
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<tbody>
<tr>
<td>Novice</td>
<td><strong>During academic courses:</strong> All assessments of clinical skills or competencies are informal, formative assessments. <strong>During academic courses:</strong> All assessments of clinical skills or competencies are informal, formative assessments. <strong>At the end learning a specific body system (NSMK, CVP or Neuro):</strong> All assessments are in the form of an objective clinical structure evaluation (OSCE) which are formal, summative assessments. Both the assessments during the academic courses and at the end of a body system fall under the Novice description of Dreyfus’ model: The learning is context free and largely non-situational. The learner uses rules to determine action; improvement occurs through self-observation, instructional feedback (Dreyfus &amp; Dreyfus, 1980).</td>
</tr>
<tr>
<td>Advanced Beginner</td>
<td><strong>Beginning of clinical placement:</strong> The Canadian Physiotherapy Assessment of Clinical Performance (ACP) tool (Mori, Brooks, Norman, Herold &amp; Beaton, 2016) suggests that at this point in time, “the student requires clinical supervision 75% to 90% of the time managing patients with simple conditions and 100% of the time managing patients with complex conditions. The student demonstrates consistency in developing proficiency with simple tasks (e.g. chart review, goniometry, muscle testing and simple interventions). The student initiates, but is inconsistent with comprehensive assessments, interventions, and clinical reasoning. The student will begin to share a caseload with the</td>
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At the end of clinical placement: Refer to the *ACP (2015)* descriptions of rating scale/anchor descriptions. Students are expected to achieve near the “Entry-level” assessment rating by the end of the MPT program. Students are considered competent only after considerable exposure to real situations (Dreyfus & Dreyfus, 1980).

| Competent | 1-2 years out in clinical practice. The graduate physiotherapist is exposed to a wide variety of typical whole situations. The physiotherapist uses a more holistic and analytical approach; however, they still rely on rules and guidelines. |
| Proficient | 3-5 years out in clinical practice. The physiotherapist relies on evidence-informed experience, and intuitive experience to determine action (Dreyfus & Dreyfus, 1980). |
| Expert | >5 -10 years out in clinical practice. Only takes place when the expert does not pay attention to his own performance but uses all mental energy to the action (Dreyfus & Dreyfus, 1980). |

7. **An integrative learning environment is promoted between courses:** Clinical scenarios or cases are developed by faculty and integrates basic sciences, foundational professional issues, and clinical reasoning. Cases are chosen purposefully to expose students to a diversity of health conditions, client demographics, care settings and physiotherapy roles. Some cases are introduced early in the program, and are subsequently used in various other courses to reinforce previous learning while building new knowledge and skills. These cases may serve as the focus of student learning in large group discussion, small group problem-based learning (for clinical decision-making), and clinical skill labs (for history taking, physical assessment, and treatment and/or client education) and in the summative, clinical skills assessment or Objective Structured Clinical Examinations. An example of a clinical case used for different learning purposes is the *Relin case*. This particular case describes an older man who has been in a motor vehicle accident, and incurred a hip fracture. The scenario describes his admission into the hospital and the surgical repair of his hip, including post-operative complications of delirium and pneumonia. He also has a history of COPD and mental illness. Figure X demonstrates the repetitive use of this clinical case. This
instructional strategy assists students to build on previous learning and expand the student’s understanding of the scope of physiotherapy practice. This strategy is in keeping with Levels of Learning (Benner, 1982).

**Figure 2: Courses using Relin Case**

- PT6250: Case used in a small group PBL setting to explore inpatient surgical orthopedic procedures, post op complications, and orthopedic treatment planning.
- PT6124: Case is used in a standardized patient lab for students to practice clinical skills for post-operative patients.
- PT6291: Case is used in an integrative clinical skills assessment in NMSK system (S6/OSCE).

8. **Service learning is optional for students:** The University of Manitoba’s believes that, “education should transform society for the better, and help to achieve social, economic and environmental justice” (University of Manitoba, 2019). While the MPT program curriculum does not require students to engaged in service-learning, students are encouraged to support communities through extra-curricular activities. Some examples of specific service learning opportunities that students and/or faculty participate in include the CanU program, Mobile Falls Prevention Clinic, Siloam Mission, sport events, and the WISH Clinic.

**Educational Strategies**

The MPT program uses a hybrid approach between active learning sessions (such as problem-based learning, peer assisted clinical skills labs including peer feedback, clinical simulation labs with standardized patients), and the more conventional provision of learning opportunities through lecture, faculty-led seminars and clinical labs. Learning contexts, through the use of case scenarios, provides relevant clinical content in addition to learning opportunities related to ethics/professional issues, communication issues, client education and assessment/treatment skills. Case scenarios are used in two ways: to drive learning (assist the students to identify
their learning needs before/during lectures and labs); and to consolidate learning (after lectures and labs). The clinical-decision making model guides problem-solving with case scenarios.

As mentioned previously, formative and summative skills/competency assessment methods are used. Assessments are tied to learning objectives and the structure of specific courses. It is understood that not everything can or should be captured in an assessment. Feedback to students is a component of assessment and essential to student learning. Strategies for feedback are variable, multiple, multi-level, and are dependent on the teaching methodology and the course/topic.

Note: When new faculty or sessional instructors are hired, there is an orientation of these new educators to the department of PT approach to education. This orientation includes exposure to teaching strategies and educational principles.

A glossary of educational terms is found in Appendix 1: Glossary
Table 3: **Educational Strategies**: A broad range of strategies are employed when teaching and assessing students. A glossary of terms is appended for stakeholders (including instructors, Curriculum Committee members, and Accreditors)

<table>
<thead>
<tr>
<th>Educational Strategies: Teaching</th>
<th>Promoting Knowledge and Critical Thinking</th>
<th>Promoting Clinical Skills</th>
<th>Promoting Reflection</th>
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<td><strong>Teaching:</strong></td>
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<tr>
<td>Lectures</td>
<td>Instructional videos for knowledge and clinical skills</td>
<td>Peer-led clinical skills learning (called the Student Learning Strategy)</td>
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<td>Flipped classroom</td>
<td>Faculty-led clinical skills learning</td>
<td>Standardized patient labs</td>
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<tr>
<td>Blended learning – mixture of web-based and classroom teaching.</td>
<td>Model patient labs</td>
<td>Experiential learning (infection control)</td>
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<td>Classroom technology - I Clickers,</td>
<td>Role playing (students play patients)</td>
<td>Clinical Site Visits</td>
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<td>On-line learning and self-study</td>
<td>Simulation-based learning</td>
<td>Clinical Education Placements</td>
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<td>Large group learning – case-based tutorials.</td>
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<td>Small group Learning – case-based tutorials</td>
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<td>Peer learning through small group / problem-based tutorials</td>
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<td>Knowledge translation exercises</td>
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<td>Discovery learning</td>
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<td><strong>Teaching:</strong></td>
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<td><strong>MPT Conceptual Framework of Clinical Practice</strong></td>
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<td>Ethic Framework of Decision Making</td>
<td>(Manitoba Provincial Health Ethics Network (MB-PHEN), 2016)</td>
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<tr>
<td><strong>MPT Professional Portfolio</strong> (Department of Physical Therapy, 2018)</td>
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<td>Experiential learning: Blanket exercise and Disability Awareness Resource Training</td>
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<td><strong>Case based discussions:</strong></td>
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<td>Biomedical ethics</td>
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<td>Inter-professionalism</td>
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<td>Educational Strategies: Teaching (continued)</td>
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**Clinical skills are taught primarily through two main evidence-informed teaching methods:**

1. **A peer-assisted lab learning method** (Williams and Reddy, 2016). This teaching method of clinical skills provides **all** students with an opportunity to teach and practice core clinical skills, to develop a novice level of learning and be evaluated reliably on relevant skills. Peer-assisted learning occurs in the program’s **Student Learning Strategy**, which involves students learning through 5 steps: Step 1 involves independent learning; Step 2 involves a faculty instructor teaching peer instructors; Step 3 involves a peer instructor teaching students; Step 4 involves students discussing their learning needs and practicing skills with a faculty coach; and Step 5 (S5) is the formative assessment of clinical skills.

2. **A traditional faculty-led lab learning method** where an instructor teaches all students the particular skills. The traditional method of teaching clinical skills usually involves teaching the class in a split groups (half the class) at a time. These labs are
be followed with a *Review lab* in which students discuss their learning needs and practice skills with a faculty coach, which is identical to the Step 4 process. The Clinical Skills Assessment (CSA) is also a formative assessment of clinical skills and uses the same process of Step 5 above.

<table>
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<tr>
<th>Educational Strategies: Assessment</th>
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<tbody>
<tr>
<td><strong>Assessing Knowledge and Critical Thinking</strong></td>
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<tr>
<td>• Written assignments</td>
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<td>• Oral presentations</td>
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<tr>
<td>• Concept maps</td>
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<tr>
<td>• Snap-shot descriptions</td>
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<td>• Written assessments on the LMS (T/F, MCQ, Short Answer, Long Answer, Matching, etc.).</td>
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</table>

The MPT program uses two evidence-informed methods to assess clinical skills:

1. **Competency-based, formative assessment** (Kulasegaram and Rangachari, 2018; Webb, 2018) (named the Step 5 in the Student Learning Strategy and the Clinical Skills Assessment in the traditional method of teaching). A formative assessment is a type of teaching technique where students may receive immediate feedback about the performance of clinical skills from a faculty
member and no marks are attached to this assessment. These assessments are organized by the Course Coordinator. The student is allowed up to three (3) opportunities to receive a satisfactory mark. If a student does not achieve a satisfactory rating after the third attempt at the assessment the student will register a fail in the practical component (and therefore a fail in the course). If student does not show up, that is registered as unsatisfactory. Students will be given 3-10 days before a reassessment EXCEPT if mutually agreed upon by student and instructor. All repeat S5’s need to be done by Friday before S6. When possible, a different FC will examine all reassessments. The questions used in the reassessment will be of similar difficulty but will be up to the discretion of the clinical instructor.

2. Objective structured clinical examination (OSCE) is summative and integrative assessment (Harden, Stevenson, Downie and Wilson, 1975; Terry, Hing, Orr, and Milne, 2017). An OSCE uses a much more formal and summative method of assessing clinical skills. The OSCE is a standardized student assessment utilized with many health care professional programs. This clinical skills assessment utilizes a standardized patient (SP), a standardized checklist and a standardized setting to assess the student’s performance of applied physiotherapy knowledge, skills and attitudes. This assessment is included in the Student Learning Strategy and is called Step 6 (S6). The skills taught through traditional methods also are assessed by the S6 / OSCE. This summative and integrative assessment was designed to serve three broad purposes: to assess the students’ ability to integrate clinical skills from various course; to screen students for unsafe clinical practice prior to entering clinical placements; and to mimic the diversity of clinical practice in the first clinical placements of NMSK, CVP and Neurology areas of care. The S6/OSCE includes six-10-minute stations. The questions require the student to integrate a broad range of clinical skills relevant to specific cases. These skills include:
   1. Communication skills,
   2. Assessment or treatment of the particular case problem,
3. Patient education/feedback, and
4. Safety.

Students are required to pass 4 out of 6 stations with a minimum grade of C+ prior to proceeding to the clinical placement. In the event of failure of this component, the decision to offer opportunity for another assessment is made at a follow-up Department of Physical Therapy Student Progress Meeting.
The curriculum is mapped out over 25 months of study combining academics and clinical experience.

The curriculum plan and content themes are sequenced to develop student knowledge, skills and behaviors. Foundational information about physical therapy practice (for example, anatomy, conceptual frameworks, and professional issues) is placed early on in the academic program to provide context for further academics. The first year curriculum also includes teaching the neuromusculoskeletal (NMSK) system including pathophysiology and physiotherapeutic interventions. In the second year of the MPT program, academics shift to the
cardiovascular pulmonary (CVP) and neurology systems including pathophysiology and related physiotherapy interventions. Evidence-informed practice, professionalism, inter-professional collaboration, and lifespan are four themes that are central to all academic content in a combination of topic-specific courses and case-based tutorials. Students are also exposed to emerging areas of practice through unique sites for half-day clinical visits.

The academic content is followed by a period of clinical experiential learning. The clinical placement blocks coincide with when the clinical community can best meet the needs of the MPT program.
The NPAG Competency Profile for Physiotherapists in Canada (2017) and the CCPUP National Curriculum Guidelines (2019) assist with both the general structure of the program’s content as well as the specific elements of the majority of content. The program’s content is designed to produce a student who demonstrates entry-level competencies, knowledge and critical thinking. A summary of the MPT program course calendar descriptions is found in Appendix 1.

Environmental scans inform the program regarding Manitoban and Canadian needs. Curricular content is enhanced to address these needs. Two areas which are of particular importance to the Rady Faculty of Health Sciences, University of Manitoba are:

1. **Indigenous Peoples’ health:** The Rady Faculty’s Reconciliation Action Plan, 2018 (Rady Faculty of Health Sciences, University of Manitoba, 2018) was developed in response to the health-related Truth and Reconciliation Commission of Canada: Calls to Action (Numbers 18-24) (Truth and Reconciliation Commission of Canada, 2012) In keeping with the Faculty, the MPT program has developed strategies to address “the five different theme areas:
   - honouring traditional knowledge systems and practices,
   - safe learning environments and professionalism,
   - student support, mentorship and retention,
   - Education across the spectrum, and
   - closing the gap in admissions,” (Rady Faculty of Health Sciences, University of Manitoba, 2018).

2. **Interprofessional collaboration (IPC):** The Department of Physical Therapy collaborates through the Office of Interprofessional Collaboration (OIPC) to develop shared curriculum about interprofessional collaboration. The Department also collaborates with the other departments in the College of Rehabilitation Sciences (CoRS) to develop shared within-college sessions for the physical therapy, occupational therapy and respiratory therapy students. There are obligatory and non-obligatory IPC learning sessions organized by either OIPC, CoRS, or the Departments. Two voluntary IPC events are the Day Shift and Pain Day. The following diagram illustrates the IPC curriculum in the MPT program:
### Figure 4: MPT Program Interprofessional Collaboration Curriculum Map

#### Year 1

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<th>MPT</th>
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<td>IPE Orientation (PT &amp; OT)</td>
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<td>Engaging in our community (OIPC)</td>
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<td>Day Shift</td>
<td>PT/OT/Nurs/Med/Pharm/RT</td>
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<td>Working with Sexually Diverse Populations (PT/OT/RT)</td>
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<td>Impact of Racism (PT/OT/RT)</td>
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<td>PT 6100</td>
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<td>Quality &amp; Patient Safety (OIPC)</td>
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<td>Day Shift</td>
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<td>PT 7124 September</td>
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<tr>
<td>Quality &amp; Patient Safety (OIPC)</td>
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<td>Mobility aids (PT &amp; Pharm)</td>
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<td>Mobility aids (PT &amp; Pharm)</td>
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<td>PT 7160</td>
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<td>Day Shift</td>
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<td>Mobility aids (PT &amp; RA)</td>
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<td>Pain Day</td>
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<td>(PT/OT/Psych/Nurs/Med/Pharm/PA)</td>
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**Key:** Med=Medicine; Nurs=Nursing; OT=Occupational Therapy; OIPC=Office of Interprofessional Collaboration; Pharm=Pharmacy; PA=Physician Assistant; PT=Physical Therapy; Psych=Psychology; RA=Rehabilitation Assistants (from Manitoba Institute of Trades and Technology); and RT=Respiratory Therapy

**Note:** OIPC events (shaded boxes) include students from all of the Rady Faculty of Health Sciences. Also, the *Day Shift* and *Pain Day* are voluntary events for students.
The Department of Physical Therapy, Curriculum Review and Renewal Committee (CRRC) is responsible for reviewing and revising curriculum content and instructional design through an ongoing, step by step approach. There are a number of working groups that provide this information to CRRC (e.g. Clinical Skills Assessment Working Group, Clinical Education Working Group and Portfolio Working Group). The CRRC makes recommendation concerning curriculum to Curriculum Committee annually.

Larger reviews of curriculum and Department activities are sparked by strategic planning, accreditations processes and/or changes in curriculum guidelines/competency profiles. Strategic planning provides the Department of Physical Therapy direction in terms of planning curriculum. Refer to the *Department of Physical Therapy Strategic Plan (2019-24)*.
Evaluation is an opportunity for the MPT educational program to improve. Program evaluation in the Department of Physical Therapy is an integrated set of activities designed to identify program strengths, program gaps and areas for improvement. Evaluation can also provide the evidence that will serve as the basis for future program planning and enhancements.

In 2009, the Department of Physical Therapy used a Matrix Evaluation Framework (MEF). The MEF identified core concepts, key indicators, methods and sources to gather information. The core concepts of effectiveness, relevancy, sustainability and accountability drove our evaluation. The MEF was useful in building capacity of developing and collecting indicators for program evaluation. Limitations were noted in the MEF for the Department when deciding on benchmarks and making sense of the mounds of data collected, and how this data subsequently informed decision-making about the program.

In 2018, as part of ongoing renewal, the Department adopted the Principles-Focused Evaluation (PFE) approach (Patton, 2017), which is a type of utilization-focused approach to evaluation. The PFE approach allows for operating in complex, uncertain and dynamic contexts, while still acknowledging that there are components within the educational program that are simple, certain, and stable. Patton defined principles as making, “the connection between vision and strategy. Vision is where you want to go. Strategy is how you intend to get there. Effectiveness principles provide guidance about how to implement strategy in a way that is true to the vision.” (Patton, 2017).

The Department’s Program Evaluation Committee (2018) has defined three key principles:
1. The MPT curriculum is evidence-informed, richly interconnected with the health systems environment and graduates competent entry-to-practice physiotherapists.
2. The MPT program provides equitable opportunities and transparent processes in admission, student progression, clinical education opportunities, and awards, which are informed by the physiotherapy professional community, the health systems environment, and the University.
3. The MPT program exists in an environment that promotes wellness, and provides adequate resources to ensure its success.

Within each principle, evaluation questions were developed, resulting in nine questions total. These questions serve as the benchmarks for program evaluation.

Within the new approach to program evaluation, previous aspects of the Matrix Evaluation Framework have been maintained, such as the core concepts of effectiveness, relevancy, sustainability and accountability. Other important aspects to MEF such as key indicators, methods and sources of information have been maintained and/or revised within the Principles-Focused Evaluation approach. Further details refer to the Program Evaluation Handbook, 2019. The full process can be viewed in the PFE Matrix, which details all the principles, evaluation questions, sources, methods, personnel responsible, monitoring and reporting and timing.
REFERENCE


Appendix 1: Glossary

Glossary

In the statements of Master of Physical Therapy Program Guide, terms that are included in the Glossary appear in Educational strategies. Glossary definitions are provided only to assist in the interpretation of the program guide.

Assessment of Clinical Performance (ACP)

The Canadian Physiotherapy Assessment of Clinical Performance (ACP) tool (Mori, Brooks, Norman, Herold & Beaton, 2016) suggests that at this point in time, “the student requires clinical supervision 75% to 90% of the time managing patients with simple conditions and 100% of the time managing patients with complex conditions. Refer to ACP 2015:
http://umanitoba.ca/rehabsciences/media/ACP.pdf

Association of College and Research Libraries (ACRL)

Framework for Information Literacy for Higher Education:
http://www.ala.org/acrl/standards/ilframework

Blended learning – mixture of web-based and classroom teaching.

Blended learning is a formal education program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path, and/or pace and at least in part at a supervised brick-and-mortar location away from home. (Staker & Horn, 2012)

Case based discussions:

- Biomedical ethics
- Cultural safety
- Inter-professionalism
- Professionalism

Case-based discussions are commonly used in postgraduate education as a strategy for implementing guidelines, stimulating reflection, and integrating scientific knowledge into clinical reasoning and decision-making. (BMJ, 2002)
Classroom technology – I Clickers

The iClicker is a classroom response system supported by Audiovisual and Classroom Technology Support. IClickers are a reliable way to periodically assess how well students understand concepts presented throughout lectures. It is a means to encourage classroom discussion, with the potential to better engage students in what they are being taught.

Currently, at the University of Manitoba, iClicker base receivers are installed in over 50 rooms on the Fort Garry campus and 10 rooms on the Bannatyne campus. (University of Manitoba, 2019)

Clinical Site Visits

Each MPT1 student completes 1 X Ortho Inpatient visit & 1 X Ortho Outpatient visit. Each MPT2 student completes 1 X CVP visit and 1 X Neuro visit (University of Manitoba, 2019).

Clinical Education Placements

The overall aim of physical therapy clinical education is to provide students with the opportunity to put the theory into practice. Students receive instruction and supervision from practicing physical therapists in a variety of clinical environments.

The clinical placement includes five clinical experiences, for a total of 29 weeks of clinical education within health care facilities in Manitoba. (University of Manitoba, 2019)

Collaborative learning within the Interprofessional Education initiative allows for engagement of interprofessional students to ‘learn about, with and from each other’.

Interprofessional education has been defined as “occasions when two or more professions learn from and about each other to improve collaboration and the quality of care.” (Centre for the Advancement of Interprofessional Education (CAIPE), 1997)

Competency-based formative assessments

(Kulasegaram & Rangachari, 2018) (Webb, 2018)(named the Step 5 in the Student Learning Strategy and the Clinical Skills Assessment in the traditional method of teaching) A formative assessment is a type of teaching technique where students may receive immediate feedback about the performance of clinical skills from a faculty member and no marks are attached to this assessment. These assessments are organized by the Course Coordinator. The student is allowed up to three (3) opportunities to receive a satisfactory mark. If a student does not achieve a satisfactory rating after the third attempt at the assessment, these results will be discussed at a MPT Student Progress Committee meeting where the decision to offer a student a re-sit examination will be made. Students offered a re-sit will be charged for the costs of this student assessment.
| Concept maps | Concept mapping is a type of structured conceptualization which can be used by groups to develop a conceptual framework which can guide evaluation or planning. (Trochim, 1989) |
| Debriefing following specified labs, tutorial sessions and clinical placements. | Debriefing is a method managed by the teacher in the simulated scenarios and consists of a self-reflection on the actions performed by the students. Debriefing following specified labs, tutorial sessions and clinical placements allows the participants reflect on actions taken in the scenario and discuss them with the team. (Rudolph, Simon, & Raemer, 2008) |
| Debriefing sessions post learning (health education labs, interpreter lab, standardized patient labs, etc) | Debriefing is defined as a dialogue between two or more people; its goals are to discuss the actions and thought processes involved in a particular patient care situation, encourage reflection on those actions and thought processes, and incorporate improvement into future performance. (Agency for Healthcare Research and Quality(AHRQ), 2019) |
| Discovery learning | Discovery Learning is a method of inquiry-based instruction, discovery learning believes that it is best for learners to discover facts and relationships for themselves. (Bruner, 1961) |
| Experiential learning (infection control) | In 1984, David Kolb suggested that adults learn through ‘experiences’ and ‘doing’, and developed a principle that included four different, sequential stages (Figure). |
In Kolb’s model, learning starts with a concrete experience. There is a stage of reflection, a phase of conceptualization and finally, the new knowledge is integrated in the existing skills and context of the learner. (Kolb, 1984)

**Experiential learning: Blanket exercise and Disability Awareness Resource Training**

Learning through reflection on doing: Blanket exercise and Disability Awareness Resource Training.

The Blanket Exercise is based on participatory popular education methodology and the goal is to build understanding about our shared history as Indigenous and non-Indigenous peoples in Canada by walking through pre-contact, treaty-making, colonization and resistance. Everyone is actively involved as they step onto blankets that represent the land, and into the role of First Nations, Inuit and later Métis peoples. (KAIROS Canada, 2019)

DART is an innovative program providing education, awareness and information to public and private sectors on the socio-economic potential of the disability community. (Independent Living Resource Centre, 2019)

**Flipped classroom**

Flipped classroom, also called inverted classroom, is a new teaching model was proposed in 21st century. (Lage & Platt, 2000) first proposed the idea of flipped classroom and apply it to the microeconomics course. Flipped classroom means moving the classroom teaching activities out of the classroom and moving the activities after class to the classroom. Flipped classroom is a blended learning form in which information technology are used before class, so that teachers are allowed to spend more time communicating with students instead of coaching (Barseghian, 2011).
Interprofessional collaborative reflection postings on the learning management system.

Instructional videos for knowledge and clinical skills

Use of videos to support teaching and learning of knowledge clinical skills.

Knowledge translation exercises

Knowledge translation is a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically sound application of knowledge to improve the health of Canadians, provide more effective health services and products and strengthen the health care system. (Canadian Institute for Health Research (CIHR), 2016)

Large group learning – case-based tutorials.

The large group discussion brings all students together for integrative discussion that is facilitated by the course coordinator. Ideally, the agenda for the discussion is student generated: students are charged to bring forward issues (from tutorial) that need clarification due to lack of sufficient evidence, insufficient clinical experience, or conflicting evidence. (Lusardi, Levangie, & Fein)

Lectures

Lectures are the most common method of teaching and learning. An understanding of the processes of lecturing and learning from lectures can be derived from cognitive theory. The key variables in effective lecturing are clarity and generating interest. The key skills in effective lecturing are preparation, explanation and the design and use of educational media. Varying activities in lectures can sustain attention and perhaps improve learning. Learning is probably improved by teaching students to learn from lectures. Having a clear underlying structure to the lecture helps students take notes. The main purposes of lectures are coverage of a topic or theme, understanding of processes and phenomena and motivating students to learn. (Dent & Harden, 2009)

Model patient labs

Model patients are individuals who have a particular health condition amenable to physiotherapy assessment and treatment.
Objective Structured Clinical Examinations (OSCE) summative assessments

Objective Structured Clinical Examinations (OSCE) summative assessments, which is summative and integrative assessment. An Objective Structured Clinical Examination (OSCE) uses a much more formal and summative method of assessing clinical skills. The OSCE is a standardized student assessment utilized with many health care professional programs. This clinical skills assessment utilizes a standardized patient (SP), a standardized checklist and a standardized setting to assess the student's performance of applied physiotherapy knowledge, skills and attitudes. This assessment is included in the Student Learning and is called Step 6 (S6). The traditionally taught skills also are assessed by the OSCE. This summative and integrative assessment was designed to serve three broad purposes: to assess the students' ability to integrate clinical skills from various course; to screen students for unsafe clinical practice prior to entering clinical placements; and to mimic the diversity of clinical practice in the first clinical placements of NMK, CVP and Neurology areas of care. SG/OSCE includes 6-10 minute stations. The questions require the student to integrate a broad range of clinical skills relevant to a specific case. These skills include:
1. Communication skills,
2. Assessment or treatment of the particular case problem,
3. Patient education/feedback, and
4. Safety.
Students are required to pass 4 out of 6 stations with a minimum grade of C+ prior to proceeding to the clinical placement. In the event of failure of this component, the decision to offer a re-sit of the OSCE exam would be made at a follow-up Department of Physical Therapy Student Progress Meeting.

On-line learning and self-study

Online courses are hosted by a learning management system (LMS) where you can login and access your courses in a secure environment. You can read course materials, discuss with your classmates and instructor, submit assignments and check assignment grades. (University of Manitoba, 2019)

Optional community service-learning

Community Service-Learning is an experiential pedagogy that integrates community engaged work, social justice education and critical reflection. It is an optional component.

Oral presentations

Oral presentation - A speech or talk in which a piece of work is shown and explained to an audience.
Peer-assisted learning

A peer-assisted learning method (Williams and Reddy, 2016). This teaching method of clinical skills provides all students with an opportunity to teach and practice core clinical skills, to develop a novice level of learning and be evaluated reliably on relevant skills. Peer-assisted learning occurs in the program's Student Learning Strategy, which involves students learning through 5 steps: Step 1 involves independent learning; Step 2 involves a faculty instructor teaching peer instructors; Step 3 involves a peer instructor teaching students; and, Step 4 involves students discussing their learning needs and practicing skills with a faculty coach. The Step 5 (S5) is the formative assessment of clinical skills.

Peer learning through small group / problem-based tutorials

Peer learning is an educational practice in which students interact with other students to attain educational goals.

Reflection assignments

Case presentations and discussion: feedback and discussion provides opportunities for elaboration of knowledge.

Role playing (students play patients)

Students role-play patients and doctors during simulated medical interviews, using special Patient Profile Sheets as guidelines for specific personality styles. In post interview discussions, the students learn a process for gaining insight into the patient’s behavior and the doctor’s common reactions. A Doctor Review Sheet summarizes effective ways to work with that personality type to achieve a good doctor-patient relationship that will ultimately contribute to better medical care. (Martin & Kahn, 1995)

Simulation-based learning

Simulation-based learning is a constructivist-learning model that provides learners with an experience of working on a usually simplified simulated world or system. This approach, widely adopted in military and aviation “to maximize training safety and minimize risk”), is today used extensively, especially in the medical education. (Ziv, Wolpe, Small, & Glick., 2006) (Swaak, Joolingena, Wouter, & de Jong, 1998)

Small group Learning – case-based tutorials

Small group: group of four or six. Learning activities are centered around small group discussion, during which a tutor insures that key learning issues are addressed by the group by raising questions and probing the depth of students' understanding, and facilitates group process so that collaborative learning can best occur. Most PBL "tutorial" discussion sessions revolve around a real or instructor-designed patient case; while problem-solving skills are employed to sort through information being explored, the emphasis
in tutorial is on the acquisition of new information and its effective integration into students' professional knowledge base rather than on solving the problem presented in the case. (Norman, 1988) (Binkley, 1988)

**Snap-shot descriptions**

Short descriptions that leave an image in the memory for later reference.

**Standardized patient and model patient labs – students use critical thinking when applying skills and later reflect on their experience.**

SPs are laypeople that are trained specifically to portray a wide range of symptoms and medical conditions. They are used both in undergraduate and postgraduate teaching situations, as well as in Objective Structured Clinical Examinations (OSCEs) to assess students’ clinical exam and communication/interpersonal skills. Case scenarios typically represent the following domains:
- Physical examination
- Communication
- History taking
- Management (University of Manitoba, 2019)

Model patients are individuals who have a particular health condition amenable to physiotherapy assessment and treatment.

**Standardized patient labs**

SPs are laypeople that are trained specifically to portray a wide range of symptoms and medical conditions. Standardized patient labs could help the student to cultivate patient interaction skills and develop a better understanding of the practitioner-patient relationship.

**Traditional Faculty-led clinical skills learning**

A traditional faculty-led learning method where an instructor teaches all students the particular skills. The traditional method of teaching clinical skills usually involves teaching the class in a split groups (half the class) at a time. These labs are be followed with a Review lab in which students discuss their learning needs and practice skills with a faculty coach, which is identical to the Step 4 process. The Clinical Skills Assessment (CSA) is also a formative assessment of clinical skills and uses the same process of Step 5 above.

**Written assessments on the LMS (T/F, MCQ, Short Answer, Long Answer, Matching, etc.).**

Educational assessment delivered by Learning Management System

**Written assignments**

A written task or piece of work allocated to someone as part of course of study.
References of Glossary


University of Manitoba. (2019). Centre for the Advancement of Teaching and learning. Retrieved from University of Manitoba: https://intranet.umanitoba.ca/academic_support/catl/flexible/online.htm


Appendix 2: Course Calendar Descriptions

PT 6100 Foundations of Physical Therapy (5 credit hours): Through lecture, labs and seminars, students are introduced to the theory of physical therapy knowledge, skills, attitudes and behaviours. Course content includes conceptual frameworks, principles surrounding safe and ethical professional conduct in the current health care environment.

PT 6110 Foundations of Evidence-Based Practice I (1 credit hour): Students will learn to critically evaluate the evidence for physical therapy practice and rehabilitation and will be challenged to become involved in contributing to the evidence for their future practice.

PT 6124 Physical Therapy and Hospital Based Care (4 credit hours): Through lecture, tutorial and laboratory sessions, students learn the role of physical therapy in Hospital-based care across the lifespan. Students will learn knowledge, skills, and behaviors which support physical therapy assessment and treatment skills.

PT 6130: Applied Sciences for Physical Therapy I (4 credit hours): Through lecture, tutorial and laboratory sessions, students will learn the application of exercise and pain physiology to body structure and function and how it relates to activity and participation.

PT 6140 Neuromusculoskeletal Anatomy for Physical Therapy (3 credit hours): Through lecture and laboratory sessions, students learn detailed musculoskeletal anatomy of the upper and lower limbs, head, neck and trunk. Joints, ligaments, muscles, nerves and vessels are included, and integration of structure and function is emphasized. Students also review the gross anatomy of the cardiorespiratory system and the abdominopelvic viscera, and are introduced to the anatomy of the spinal cord and peripheral nerves relevant to reflex activity.

PT 6221 Clinical Skills for Physical Therapy in Neuromusculoskeletal Conditions 1 (6 credit hours): Through lecture, tutorial and laboratory sessions, students apply physical therapy assessment, diagnostic and treatment skills for upper quadrant Neuromusculoskeletal conditions across the lifespan.

PT 6224 Clinical Skills for Physical Therapy in Neuromusculoskeletal Conditions 2 (6 credit hours): Through lecture, tutorial and laboratory sessions, students apply physical therapy assessment, diagnostic and treatment skills for lower quadrant Neuromusculoskeletal conditions across the lifespan.

PT 6230 Applied Sciences for Physical Therapy 2 (6 credit hours): Through lecture, tutorial and laboratory sessions, students will learn the application of anatomy, biomechanics, physiology, pathology and exercise to the neuromusculoskeletal system. Scientific and medical theoretical basis for physical therapy intervention will be covered.

PT 6250 Integrated Practice for Neuromusculoskeletal Conditions (3 credit hours): Students integrate relevant information for physical therapy management of neuromusculoskeletal conditions through problem-based learning. Case studies reflect current key indicator conditions from the Entry-to-Practice Physiotherapy Curriculum: Content Guidelines for Canadian University Programs.
PT 6260 Physical Therapy Practice and Professional Issues 1 (3 credit hours): Through lecture and tutorial sessions, students will address various professional topics to develop their knowledge concerning business, ethical and legal principles for physical therapy practice.

PT 6291 Neuromusculoskeletal Clinical Education 1 (6 credit hours): First of two six-week experiential learning periods in the clinical community, providing opportunity for students to assess and treat clients with neuromusculoskeletal disorders under supervision. Includes 3-4 hours of preparatory sessions prior to the placements, and 3-4 hours of follow up including debriefing group discussion and presentation of reflective journals.

PT 6292 Neuromusculoskeletal Clinical Education 2 (6 credit hours): Second of two six-week experiential learning periods in the clinical community, providing opportunity for students to assess and treat clients with neuromusculoskeletal disorders under supervision.

PT 6310: Foundations of Evidence-Based Practice II (1 credit hour): Students will learn to identify appropriate research and/or evaluation questions and appropriate methodologies for the rehabilitation context and the general process of conducting a research/evaluation study to facilitate future participation in research.

PT 7121 Clinical Skills for Physical Therapy in Neurological Condition (5 credit hours): Through lecture, tutorial and laboratory sessions, students apply physical therapy assessment and treatment skills for Neurological conditions across the lifespan.

PT 7124 Clinical Skills for Physical Therapy in Cardiorespiratory Conditions (5 credit hours): Through lecture, tutorial and laboratory sessions, students apply physical therapy assessment, diagnostic and treatment skills for cardiorespiratory conditions across the lifespan.

PT 7150 Integrated Practice for Cardiorespiratory and Neurological Conditions (5 credit hours): Students integrate relevant information for physical therapy management of complex cardiorespiratory and neurological conditions through lectures, labs and small group work with a focus on Interprofessional collaborative practice. Case studies may include but are not limited to: HIV, geriatrics, developmental disorders, spinal cord injuries, ARDS, critical care, pregnancy and leukemia.

PT 7160 Physical Therapy Practice and Professional Issues 2 (3 credit hours): Through lecture and tutorial sessions, students will integrate their knowledge and clinical experience concerning business, ethical and legal principles for physical therapy practice.

PT 7230: Applied Sciences for Physical Therapy 3 (3 credit hours): Through lecture, tutorial and laboratory sessions, students will learn the application of anatomy, physiology and pathology to the cardiovascular and pulmonary systems. This course provides the theoretical basis for physical therapy intervention for cardiovascular and pulmonary disorders.

PT 7292 Neurosciences Clinical Education (6 credit hours): A six-week experiential learning period in the clinical community, providing opportunity for students to assess and treat clients with neurological disorders under supervision.

PT 7294 Cardiovascular and Pulmonary Clinical Education (5 credit hours): A five-week experiential learning period in the clinical community, providing opportunity for students to assess and treat clients with cardiovascular and pulmonary disorders under supervision. Includes 3 - 4 hours of preparatory
sessions prior to the placements, and 3 - 4 hours of follow up including debriefing group discussion and presentation of reflective journals.

**PT 7330 Applied Sciences for Physical Therapy 4 (3 credit hours):** Through lecture, tutorial and laboratory sessions, students will learn the application of anatomy, physiology and pathology to the neurological system. Scientific and medical theoretical basis for physical therapy intervention will be covered.

**PT 7390 Elective Clinical Education (6 credit hours):** One six-week experiential learning period in the clinical community to complement previous clinical placements, address gaps in previous clinical placements and / or to explore emerging roles in physiotherapy.

**PT 7410 Exercise Prescription and Manual Therapy for Physical Therapists (3 credit hours):** This course involves class, lab, tutorial work and off-site visits; students are expected to prepare for each activity by completing the required readings for lectures, tutorials and the assigned skills laboratories. Class work includes lectures, in-class small group work, and tutorial sessions. Clinical skills are taught in laboratories by either faculty or peer coach.

**PT 7500 Physical Therapy Evaluation/Research Project (6 credit hours):** Under the supervision of a faculty advisor the students will develop and complete a physical therapy or rehabilitation focused research or evaluation project.