

# Knowledge Translation and Implementation Science in Health Professions Education: Time for Clarity?

Aliki Thomas, PhD, OT, School of Physical and Occupational Therapy, Centre for Medical Education, McGill University, Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal; and André Bussi eres, PhD, DC, School of Physical and Occupational Therapy, McGill University, Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal, Department of Chiropractic, Universit  du Qu bec   Trois-Rivi eres

- A central objective of health professions education (HPE) is to provide learners with state-of-the-art education that will prepare them for their future practice as health care professionals.
- There is a growing evidence base in HPE regarding individual learners (teaching and assessment strategies), organizations (curricular review, program evaluation), and policy (accreditation, licensure).<sup>1–3</sup>
- High-stakes decisions such as selection, assessment, and licensure demand a critical and evidence-informed approach to HPE.
- Knowledge translation aims to promote the uptake and application of research evidence to improve educational practices and ultimately patient care.
- Efforts to inform and improve HPE should be underpinned by the science (theories, models, methods) of knowledge translation, also known as implementation science.

## End Goal: Knowledge Utilization to Inform and Improve HPE

TYPE OF UTILIZATION	DEFINITION	EXAMPLES
<b>Research utilization</b>	Specific kind of knowledge utilization whereby the knowledge has a research base to substantiate it. It is a complex process through which knowledge, in the form of research, is transformed from the findings of one or more studies into <b>instrumental, conceptual, or persuasive/symbolic</b> utilization.	
<b>Instrumental utilization</b>	A concrete application of research from one or more studies, which is normally translated into a material and usable form, such as a protocol or set of guidelines	<i>Findings from a BEME systematic review that increase the use/application of an assessment method</i>
<b>Conceptual utilization</b>	Research findings from one or more studies that may change someone's thinking but not necessarily his/her observable actions	<i>Findings from research that influence someone's attitudes and beliefs toward or intention to use a particular assessment</i>
<b>Persuasive/symbolic utilization</b>	The use of research findings from one or more studies as a persuasive (or political) tool to legitimize a position or practice	<i>Findings from research that influence accreditation standards</i>

Numerous terms have been used interchangeably to refer to the dissemination and uptake of research findings that inform and change educational practices (e.g., diffusion, knowledge translation, dissemination, translational research, implementation).<sup>4</sup> Below, we differentiate and clarify these terms to facilitate discussion within HPE and to help highlight the relationship between knowledge utilization and educational practices and policy.

## Meeting the End Goal of Knowledge Utilization: Three Distinct but Interrelated Processes<sup>5</sup>

<b>Diffusion</b> "Let it happen"	A passive process by which new evidence is communicated to researchers, educators, and educational policy makers using traditional vehicles	<b>Examples:</b> <ul style="list-style-type: none"> <li>– Conference presentations</li> <li>– Peer-reviewed publications</li> <li>– Non-peer-reviewed publications</li> <li>– Social media</li> </ul>
<b>Dissemination and Knowledge Translation</b> "Make it happen"	A process by which targeted and tailored data and information (main messages or key implications) are transmitted to specific relevant audiences to increase the application and uptake of evidence as well as to bridge research–practice gaps	<b>Examples:</b> <ul style="list-style-type: none"> <li>– End-of-grant reports to funders</li> <li>– Faculty development activities</li> <li>– Summaries and briefs to stakeholders</li> <li>– Creation of knowledge tools such as guidelines and BEME systematic reviews</li> </ul>
<b>Implementation Science</b> "Use robust methods"	A process that uses robust scientific methods underpinned by theories, models, and frameworks to (1) identify research–practice gaps, (2) identify supports and barriers to the uptake of educational evidence, (3) design interventions to reduce research–practice gaps, and (4) evaluate the impact of the interventions on educational practices	<b>Examples:</b> Theory of planned behavior and knowledge-to-action process frameworks used both to assess supports and barriers associated with teachers' use of effective feedback strategies and to design tailored, theory-driven interventions to promote uptake of effective feedback strategies

### Key Messages

- A growing emphasis is placed on evidence-informed approaches to HPE.
- Diffusion (raising awareness), dissemination (use of knowledge), and implementation science (theories and methods that underpin knowledge translation) are distinct but interrelated concepts.
- To promote the uptake and application of evidence in HPE, researchers and educators need to identify research–practice gaps, implement knowledge translation strategies, and evaluate impacts iteratively.

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**Author contact:** aliki.thomas@mcgill.ca

BEME indicates the Best Evidence Medical Education Collaboration

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