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Transdisciplinary Approach to Transfer of Learning

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Transdisciplinary Approach to Transfer of Learning

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Abstract

Transfer of learning forms the basis of thinking, learning, and problem solving and is often considered to be the ultimate goal of education. It is of crucial importance to understand what learning experiences can lead to successful transfer across multiple contexts. This research combines findings from education, psychology, neuroscience, and business to develop a new comprehensive transdisciplinary model to examine and evaluate adult learners' skills to transfer learning across different contexts and assist educators and instructional designers in developing effective instructional strategies for enhancing transfer in online and blended learning environments.

Aim

The purpose of this research study is to define the various factors affecting students' abilities and skills to transfer learning. The study seeks to develop a model that could be useful for (a) researchers, by providing a lens to understand the complex nature of transfer and the multiple dimensions at play; and (b) educators and instructional designers, by suggesting specific instructional strategies that can assist them in enhancing students' transfer skills in online and blended learning environments.

Problem

In instructional and cognitive psychology, generally, and particularly adult education, transfer of learning has been a topic of research since the early 1900s, when E. L. Thorndike conducted his first studies to measure the degree to which people transfer learning (Woodworth & Thorndike, 1901). A major problem with transfer is that it is a rather controversial phenomenon and has proven to be hard to define or investigate (Barnett & Ceci, 2002). One possible reason for the controversy might be the fact that there is little agreement in scholarly research as to what constitutes transfer, what its underlying mechanisms are, and to what extent transfer occurs (Barnett & Ceci, 2002). Next, what constitutes as evidence for successful transfer still remains unclear. In their book entitled *Transfer on Trial*, Detterman and Sternberg (1993) provided analysis of research on transfer by concluding that most studies on transfer had failed to find evidence for it.

Another major issue with transfer is the lack of knowledge of specific instructional methodologies that could be used to enhance adult learners' skills to transfer learning in online and blended learning environments. This often results in students' inability to apply knowledge acquired in a learning context to the practical problems they encounter in their everyday lives and workplaces. As noted by Hung (2013), adult learners' employees are often required to be critical thinkers, independent problem solvers, and lifelong learners to be able to stay

competitive in the job market. Therefore, it is important that college students or workplace trainees acquire the skills of applying and transferring knowledge across different settings.

Research Questions

This study aims to explore the following research questions:

- What are the existing conceptualizations of learning transfer across four disciplines: psychology, education, neuroscience, and business?
- How can adult learners' transfer skills be facilitated and evaluated in online and blended learning environments?

Proposed Methods

This proposal acknowledges the multidimensionality of the transfer phenomenon and adopts a transdisciplinary approach to studying it. This approach emphasizes the importance of multidisciplinary research in solving a complex real-world issue (Knox, 2016). As noted by Samuels (2009), "What connects transdisciplinary participants is not a common theoretical perspective or methodology or epistemology, but a common issue to which all apply their own particular expertise with the goal of reaching a holistic understanding of an issue" (p. 49). With this in mind, this research combines findings from psychology, education, neuroscience, and business to study the transfer phenomenon. Adoption of a transdisciplinary approach assumes that the researcher is flexible and open toward multiple perspectives, interpretations, and assumptions while conducting research.

A multiphase mixed method research design, involving a combination of qualitative and quantitative studies, is proposed in order to be able to investigate the complex and multidimensional phenomenon of transfer. The three research phases are (1) developing a model; (2) testing the model; and (3) refining the model based on the findings.

Phase One of the study will involve developing a new comprehensive model of transfer based on an integrative literature review and surveys with faculty in four different colleges and schools at Drexel University: the College of Business, the College of Arts and Sciences, the School of Education, and the School of Biomedical Engineering, Sciences and Health Systems. The integrative literature review will be conducted across four different disciplines, namely psychology, education, neuroscience, and business. The main goal of the literature review will be to explore how learning transfer is characterized across different disciplines, while revealing the similarities and differences among the different approaches, theories, and definitions of the transfer phenomenon.

The next step in Phase One will involve designing an exploratory sequential mixed methods study involving semi-structured interviews and a survey to collect both qualitative and quantitative data on how the faculty across different colleges at Drexel characterize transfer of learning, as well as to explore the specific instructional strategies that they use to enhance their students' transfer skills. The qualitative data collected from the interviews will then be analyzed using an open coding technique, which will help to identify the emerging themes. Next, the findings from the qualitative data will be used to design a survey for instructors across the four colleges and schools at Drexel University. Descriptive and correlational analysis will be used to analyze the quantitative data collected through the survey.

Finally, the findings from both the extensive literature review and the exploratory sequential mixed methods study will be used to develop a new multidimensional model of learning transfer. The model will define the various factors affecting transfer and include specific pedagogical practices to facilitate students' transfer skills in online and blended environments.

Phase Two of this research study will include testing the model to examine the relationships among the factors across the different dimensions in the new model, such as pedagogical dimeson, personal dimension, context dimeson, and content dimension. Phase Three will involve refining the model based on the results of the data analysis in Phase Two.

Research Implications

The proposed model seeks to advance understanding of the transfer phenomenon by combining multiple approaches, methodologies, and levels of analysis. The new model will support and guide design and implementation practices for instructors across disciplines geared toward teaching for transfer. Concurrently, the new model will support learners with making connections across disciplines, between their personal lives, and at school or in a workplace. The ultimate goal is to be able to make a contribution to the process of repurposing education; shifting away from traditionalist views of what it means to be a successful learner, worker, or citizen.

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Author Biography

Tamara Galoyan is a doctoral student, enrolled in the Educational Leadership Development and Learning Technologies program in the School of Education at Drexel University. Tamara holds a Master's degree in TEFL (Teaching English as a Foreign Language) from the American University of Armenia and a Master's degree in Linguistics from the Yerevan State Linguistic University, Armenia. Her research interests focus on the neurocognitive, behavioral, and social factors affecting acquisition, retention, and transfer of learning in online and blended learning environments. Tamara has nearly a decade of experience in teaching English as a Foreign Language to learners of diverse backgrounds in Armenia and the US. She has also been involved in online, blended, and onsite course development, assessment, testing, curriculum design, training and mentoring.