



Informing and Evaluating Educational Applications With the Kirkpatrick Model in Virtual Environments: Using a Virtual Human Scenario to Measure Communication Skills Behavior Change

Stephanie Camell ^{1*}, Alexandre Gomes De Siqueira ², Anna Miles ³ and Benjamin Lok ³

¹Department of Computer Science, University of Central Florida, Orlando, FL, United States, ²Department of Computer and Information Sciences and Engineering, University of Florida, Orlando, FL, United States, ³Speech Science, The University of Auckland, Auckland, New Zealand

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*Correspondence:

Stephanie Camell
stephanecamell@gmail.com

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Increasingly, virtual environments are being used in educational and training applications. As with other types of applications that use virtual environments, these scenarios must be evaluated in terms of user experience. However, they also should be evaluated on the efficacy of the training or learning provided, so as to ensure learning transfer. Frameworks, such as the Kirkpatrick Model, exist to evaluate training scenarios, but application of these frameworks has not been fully utilized in development of virtual environment-based education and training. To address this gap and to also share our process with other virtual environment developers, we discuss our experience applying the Kirkpatrick Model to an existing virtual human (VH) application for medical communication skills training. The Kirkpatrick Model provides different levels of evaluation for training programs that include learners' reactions to the training, the knowledge acquired from the training, behaviors indicating the training was applied, and the degree high-level results were impacted as a result of the training. While we discuss all of the Model's levels, our focus for this work is Level 3 Behavior. The Kirkpatrick Model currently recommends that behavioral change may only be measured while a trainee is working in a real-world context. However, given existing evidence that VH applications have been shown to elicit real-world behaviors from participants, we suggest that VH training scenarios may be a method of measuring Behavior level metrics before trainees are evaluated *in situ*. Initial support for this suggestion is provided by our study examining whether VHS can elicit changes in communication skills learners' message production behavior over time. This study indicates that learners displayed changes in several metrics over the course of the semester. Based on this finding, we suggest a direction for future research: observing learner behavior in a virtual environment as a pre-cursor to behavioral measures while in a real-world scenario.

Keywords: virtual reality, educational technology, communication skills, kirkpatrick model, virtual humans, virtual patients

Evaluating Educational Environments

Peter K. Smith, Anthony D. Pellegrini



Evaluating Educational Environments:

Evaluating Educational Environments Rudolf H. Moos, 1979 *Evaluating Educational Environments* Rudolf H. Moos, 1979-03-01 **Evaluating Educational Environments** Robert McNeil Smith, John T. Neisworth, John G. Greer, 1978-01-01 *Evaluating Educational Environments* Rudolf H. Moos, 1997 **Evaluating Learning Environments** Wesley Imms, Benjamin Cleveland, Kenn Fisher, 2016-09-27

The recent trend in innovative school design has provided exciting places to both learn and teach. New generation learning environments have encouraged educators to unleash responsive pedagogies previously hindered by traditional classrooms and has allowed students to engage in a variety of learning experiences well beyond the traditional chalk and talk common in many schools. These spaces have made cross disciplinary instruction collaborative learning individualised curriculum ubiquitous technologies and specialised equipment more accessible than ever before. The quality of occupation of such spaces has also been encouraging. Many learning spaces now resemble places of collegiality intellectual intrigue and comfort as opposed to the restrictive and monotonous classrooms many of us experienced in years past. These successes however have generated a very real problem. Do these new generation learning environments actually work and if so in what ways? Are they leading to the sorts of improved experiences and learning outcomes for students they promise? This book describes strategies for assessing what is actually working. Drawing on the best thinking from our best minds, doctoral students tackling the challenge of isolating space as a variable within the phenomenon of contemporary schooling, *Evaluating Learning Environments* draws together thirteen approaches to learning environment evaluation that capture the latest thinking in terms of emerging issues, methods and knowledge.

Evaluating Educational Technology Geneva D. Haertel, Barbara Means, 2003-09-26. Features chapters by today's leading authorities who outline research designs, methodologies and types of assessments that can be used to more effectively evaluate educational technologies.

Designing Educational Project and Program Evaluations David A. Payne, 1994-03-31. Drawing upon experiences at state and local level, project evaluation and based on current research in the professional literature, Payne presents a practical, systematic and flexible approach to educational evaluations. Evaluators at all levels, state, local and classroom will find ideas useful in conducting, managing and using evaluations. Special user targets identified are state department of education personnel and local school system administrative personnel. The volume can be used by those doing evaluation projects in the field or as a text for graduate courses at an introductory level. The book begins with an overview of the generic evaluation process. Chapter Two is devoted to the criteria for judging the effectiveness of evaluation practice. Chapter Three addresses the all important topic of evaluation goals and objectives. Chapters Four, Five and Six basically are concerned with the approach, framework or design of an evaluation study. Chapter Four contains a discussion of four major philosophical frameworks or metaphors and the implications of these frameworks for conducting an evaluation. Chapters Five and Six describe predominantly quantitative and qualitative designs respectively. Design, implementation and operational

issues related to instrumentation Chapter Seven management and decision making Chapter Eight and reporting and utilization of results Chapter Nine are next addressed The final chapter of the book Chapter Ten considers the evaluation of educational products and materials

Evaluating Treatment Environments Rudolf H. Moos, 1997-01-01 This book presents the social ecological approach to the comparison and evaluation of treatment environments Social ecology is concerned with the environment and how people adapt to it The field deals with both the physical and the social environment It combines basic research approaches with a dedication to resolving common human problems The procedures developed in this classic volume have been used to monitor and improve treatment programs to assess the adequacy of program implementation and to understand the determinants and outcomes of specific aspects of treatment environments

Studies in Educational Learning Environments Swee Chiew Goh, Myint Swe Khine, 2002 The study of classroom and school learning environments and their effects on students learning has been going on for more than a century Past efforts in the study of the learning environment and its determinants have indicated that it plays a major role in improving teaching and learning in primary secondary and higher education This book covers various dimensions of the learning environment its underlying theory the impact on learning the curriculum and classroom management It is organized in such a way as to provide a cross national and multi cultural forum for presenting and discussing research findings as well as development and applications of various techniques and instruments in learning environment research

Technology-rich Learning Environments Myint Swe Khine, Darrell Lyell Fisher, 2003 Readership Trainee teachers educational policy makers school management personnel information and communication technology coordinators computing teachers academics

Thirty Years of Learning Environments, 2018-11-01 This volume is a commemorative book celebrating the 30th Anniversary of the Special Interest Group SIG on Learning Environments of the American Educational Researchers Association It includes a historical perspective starting with the formation of the SIG in 1984 and the first program space at the AERA annual meeting in 1985 in Chicago This retrospective notes other landmarks in the development of the SIG such as the creation of the international journal Learning Environments Research The study of learning environments was first conceptualized around the need to develop perceptual and psychosocial measures for describing students individual or shared educational experiences e g feel of the class or classroom climate Over the ensuing decades the field expanded considerably from its early roots in science education to describe other phenomenon such as teacher student interpersonal relationships or applications in pre service teacher education and action research The book also describes several new areas of promise for the expanding field of learning environments research that in the future will include more diverse contexts and applications These will include new contexts but established research programs in areas such as information and communications technology and environmental education but also in emerging research contexts such as the physical classroom environment and links among learning environment contexts and students emotional health and well being Contributors are Perry den

Brok Rosie Dhaliwhal Barry J Fraser Catherine Martin Dunlop David Henderson Melissa Loh Tim Mainhardt George Sirrakos Alisa Stanton Theo Wubbels and David B Zandvliet **Classroom Environment (RLE Edu O)** Barry Fraser,2012-06-14 The increasing impact of performance based judgments on schools and teachers in the classroom has its critics and supporters Some oppose the trend and seek to deny the importance of quantitative measures Others have sought to find ways of implementing educational measurement constructively and with understanding of the concerns Classrooms are where the operational business of learning takes place and it is on the quality of life within the classroom that the broader process of learning concerns for the wider community and others is nurtured The climate of the classroom has a large impact on the final outcome measure to which so much interest is directed To help our understanding of the dynamics involved much work has been done in the development and refinement of quantitative studies to this area by studying essential information about how teachers and students perceive the environments in which the work Research on classroom climates has reached a practical and theoretical maturity and this volume offers an account of the developments that have taken place and the potential for understanding the classroom as a vital component of the curriculum This book will also be an essential resource tool for anyone engaged in classroom research *Families and their Learning Environments* Kevin Marjoribanks,2017-04-28 First published in 1979 this study is one of the first works of educational research to include detailed assessments of family environments in an analysis of performance of children at their schools Much of the research is based on data collected from families in Australia Canada and England and the findings have been integrated with results from other family environments research The study also explores social and psychological conceptual positions that will have relevance for further educational investigations This book will be of particular interest to those studying the relationship between family environments and education as well as the sociology of education **Psychology of Education: Schools, teachers and parents** Peter K. Smith,Anthony D. Pellegrini,2000 Applied Ecological Psychology for Schools Within Communities Jody L. Swartz,William E. Martin,Jody L. Swartz-Kulstad,2013-01-11 This volume provides a thorough examination of the interplay between individuals and their environment in the development and maintenance of problem behaviors and delineates procedures for conducting assessment intervention and prevention within the child s ecosystem As individuals structure change and organize their environments their environments work to do the same Environmental or contextual and individual variables act reciprocally to shape an individual s behavior For school aged youth this reality necessitates an ecological approach to assessment intervention and prevention Specifically problem behaviors are partly developed and maintained by a combination of factors present in the child s psychosocial ecosystem home school and community Although there is an abundance of theoretical applications and research supporting this concept the predominant trend has been to emphasize the properties of the person As a result one is left to assume that the genesis of difficulties in adaptation lies in internal or personal states and traits of the individual In contrast to traditional psychology theories which focus primarily on the

individual incorporation of ecological psychology concepts allows for a more comprehensive and in depth analysis of sources contributing to the individual's ability to adapt to their psychosocial environment. Ecological theories which drive assessment, intervention and prevention efforts provide the necessary framework for assisting school aged youth and their associated ecological networks to cope with and overcome the multidetermined, multifaceted concerns that arise during the school years. However, this is an often difficult and cumbersome task for educators, parents and school systems to undertake. To this end, this volume focuses on the functional application of ecological psychology for schools within communities. Each of the 10 chapters, written by key figures in school, family, counseling and community psychology, explores the use of ecological theory from a different perspective, ranging from focus on the child, the child within the classroom, the classroom teacher and the community to considerations in working with special populations such as juvenile delinquents and in planning for developmental issues such as school to work transition. The final chapter summarizes and integrates the previous chapters and provides suggestions for future directions in the field.

Handbook of Research on Science Education, Volume II
Norman G. Lederman, Sandra K. Abell, 2014-07-11 Building on the foundation set in Volume I, a landmark synthesis of research in the field, Volume II is a comprehensive state of the art, new volume highlighting new and emerging research perspectives. The contributors, all experts in their research areas, represent the international and gender diversity in the science education research community. The volume is organized around six themes: theory and methods of science education research, science learning, culture, gender and society, and science learning, science teaching, curriculum and assessment in science, science teacher education. Each chapter presents an integrative review of the research on the topic it addresses, pulling together the existing research, working to understand the historical trends and patterns in that body of scholarship, describing how the issue is conceptualized within the literature, how methods and theories have shaped the outcomes of the research, and where the strengths, weaknesses and gaps are in the literature. Providing guidance to science education faculty and graduate students and leading to new insights and directions for future research, the *Handbook of Research on Science Education, Volume II* is an essential resource for the entire science education community.

Higher Education, 1981
Windows Into Science Classrooms Kenneth George Tobin, Jane Butler Kahle, Barry J. Fraser, 1990 This book is based on recent ethnographic research which records, interprets and analyses actual occurrences in the science classroom. In addition, the researchers place their syntheses in a theoretical framework. Individually, they record and interpret observations; collectively, they validate assertions and interpretations in order to build a theoretical base.

Teacher Transition into Innovative Learning Environments Wesley Imms, Thomas Kvan, 2020-11-30 This open access book focuses on how the design and use of innovative learning environments can evolve as teaching practices and education policies change. It addresses how these new environments are used, how teachers are adapting their practices, the challenges that these changes pose, and the effective evaluation of these changes. The book reports on emerging research in learning environments with a particular

emphasis on how teachers are transitioning from traditional classrooms to innovative learning environments It offers a significant evidence based global assessment of current research in this field by designers architects educators and policy makers It presents twenty five cutting edge projects from researchers in fifteen countries Thanks to the book s comprehensive international perspective which combines theory and practice in a single publication readers will gain a wealth of new insights *Creating Effective Teaching and Learning Environments: First Results from TALIS*
OECD,2009-06-18 This survey aims to help countries review and develop policies to make the teaching profession more attractive and more effective

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