

## Critical Lens in Learning Analytics Research: A Systematic Literature Review

Marcia Cristina Moraes<sup>1</sup>, James E. Folkestad<sup>2</sup>, Daniel Birmingham<sup>1</sup>

<sup>1</sup>School of Education – Colorado State University (CSU)  
Fort Collins – CO – USA

{marcia.moraes, james.folkestad, daniel.birmingham}@colostate.edu

***Abstract.** This paper describes a systematic literature review that aims to answer the following research question: How has critical theory been used in learning analytics research? Nine previous literature review and fifteen studies were analyzed. Results showed that none of the previous literature reviews considered critical theory as a component of their analyses and the topics of algorithm bias, ethics, justice and prediction are among the most studied on works that used Critical lens in Learning Analytics. Considerations are drawn to support future works that promotes the use of Critical lens in Learning Analytics and in the design of adaptive systems for learning and teaching.*

### 1. Introduction

Learning analytics (LA) emerged as an independent area from the field of academic analytics in 2010, and papers related to LA draw on a diverse range of literature from fields such as education, technology and social sciences [Ferguson, 2012]. This diversity reflects in the works that have been done, such as predicting students' success [Gasevic et al., 2016], detecting learning strategies [Gasevic et al., 2017], designing learning analytics [Shibani et al. 2019], learning analytics visualizations [McKenna et al. 2019], and students' vulnerability [Prisloo and Slade, 2016].

Acknowledging that data does not speak for itself and that the selection and use of student data are not neutral acts but embedded in social, political, economic and cultural agendas [Selwyn, 2014] and considering that several works in LA are being done in the fields of education and social science, this paper aims to answer the following research question: How has critical theory been used in learning analytics research?.

In order to answer that question, we conducted a systematic literature review as defined by Petticrew and Roberts (2006) as a method of making sense of a large bodies of information, mapping out areas of uncertainty, and identifying where little or not relevant research has been done, but where new studies are needed. As a result, we have the purpose of providing evidence-based information to support and develop practices involving the use of critical theory in LA and applying it to adaptive systems for learning and teaching.

### 2. Background

In this paper we are using the definition of learning analytics adopted by the Society for Learning Analytics Research (SoLAR) [Ferguson, 2012, p.3]: "Learning analytics is the

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**Alfred Charles Coles**



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**Research Projects for Business & Management Students** Siah Hwee Ang, 2021-01-27 This second edition of *Research Projects for Business and Management Students* provides students undertaking extended research with a foundation upon which to build their practice. The author sets out each stage of a research project systematically to allow you to follow along and build an understanding of the processes involved in carrying out in depth pieces of research as well as the functions of commonly used research methods. Conversation boxes throughout will also help situate your learning by providing examples of commonly asked questions, challenges that may occur while you carry out your research and guidance on how to answer them. Professor Siah Hwee Ang is Professor of International Business and Strategy, inaugural Chair in Business in Asia and Director of the NZ's Southeast Asia Centre of Asia Pacific Excellence at Victoria University of Wellington, New Zealand.

**The Critical Turn in Tourism Studies** Irena Ateljevic, Nigel Morgan, Annette Pritchard, 2013-06-17 This volume is designed to enable its reader to think through vital concepts and theories relating to tourism and hospitality management, stimulate critical thinking and use multidisciplinary perspectives. The book is organized around three key ways of producing social change in and through tourism: critical thinking, critical education and critical action.

***Understanding and Evaluating Research*** Sue L. T. McGregor, 2017-10-25 *Understanding and Evaluating Research: A Critical Guide* shows students how to be critical consumers of research and to appreciate the power of methodology as it shapes the research question, the use of theory in the study, the methods used and how the outcomes are reported. The book starts with what it means to be a critical and uncritical reader of research, followed by a detailed chapter on methodology and then proceeds to a discussion of each component of a research article as it is informed by the methodology. The book encourages readers to select an article from their discipline, learning along the way how to assess each component of the article and come to a judgment of its rigor or quality as a scholarly report.

**Critical Religious Pluralism in Higher Education** Jenny L. Small, 2020-03-26 This text presents a new critical theory addressing religious diversity, Christian religious privilege and Christian hegemony in the United States. It meets a growing and urgent need in our society: the need to bring together religiously diverse ways of thinking and being in the world and eventually to transform our society through intentional pluralism. The primary goal of Critical Religious Pluralism Theory (CRPT) is to acknowledge the central roles of religious privilege, oppression, hegemony and marginalization in maintaining inequality between Christians and non-Christians, including the nonreligious in the United States. Following analysis of current literature on religious, secular and spiritual identities within higher education and in-depth discussion of critical theories on other identity elements, the text presents seven tenets of CRPT alongside seven practical guidelines for utilizing the theory to combat the very inequalities it exposes. For the first time, a critical theory will address directly the social impacts of religious diversity and its inherent benefits and complications in the United States. *Critical Religious Pluralism in Higher Education* will appeal to scholars, researchers and

graduate students in higher education as well as critical theorists from other disciplines      Critical Content Analysis of Children's and Young Adult Literature Holly Johnson, Janelle Mathis, Kathy G. Short, 2016-06-17 In this book the authors describe their strategies for critically reading global and multicultural literature and the range of procedures they use for critical analyses They also reflect on how these research strategies can inform classrooms and children as readers Critical content analysis offers researchers a methodology for examining representations of power and position in global and multicultural children's and adolescent literature This methodology highlights the critical as locating power in social practices by understanding uncovering and transforming conditions of inequity Importantly it also provides insights into specific global and multicultural books significant within classrooms as well as strategies that teachers can use to engage students in critical literacy

**Writing for College** Robert Alden Rubin, 2018-09-20 This book guides first year students through the dos and don'ts of composition from such basic questions as Can I use I in a college essay to more advanced points about structure and style Emphasizing the importance of writing in all majors the author encourages students to find their own voice and to express themselves without jargon or academese Tips are provided on concision use of supporting claims marshaling arguments researching topics documenting sources and revision

**Solutions to Water Crises (Related to Actual Interventions)** Jenia Mukherjee, Saket Pande, Melissa Haeffner, Sara Marks, Pieter van Oel, Matthew R. Sanderson, Adriana Allen, 2024-01-26 This Research Topic is a part of the Delft 2021 1st Sociohydrology Conference series To view the other sessions please follow the links below Innovating a New Knowledge Base for Water Justice Studies Hydrosocial Sociohydrology and Beyond Scale Issues in Human Water Systems Water Resources and Human Behavior Analysis and Modeling of Coupled Water Human Systems Feedbacks and Coevolution Innovative Sensing Observing Measuring and Analysing Human Water Data Pluralistic water research integrates the hydrological and the social to provide sustainable solutions to water crises While relying upon robust quantitative modelling sociohydrology captures crises across many waters surface ground and interstitial along quantity and quality dimensions hydrosocial unfurls power hierarchies in access to safe and required quota of water be it for drinking or irrigation purposes The success of engineering solutions laying out hard interventions such as solar powered irrigation dams high yielding crop varieties water treatment plants and water distributions and purifications depend on soft socio political cultural and psychological variables like the political landscape community behaviours and governance arrangements How these soft parameters limit or advance the effect of hard interventions await more enhanced modelling and place based qualitative analyses to disentangle various cause effect pathways While historical and process based sociohydrology accommodates detailed temporal datasets and causal relationships across human water systems the hydrosocial paradigm reconciles non modern anti hegemonic water techniques and knowledge systems animating local agencies within specific hydrosapes This issue is dedicated to capture real time innovations through which water challenges have been confronted It intends to unravel storylines along actionable water

projects reflecting on mediations across multiple actors and networks in specific spatio temporal and cultural contexts finally drawing our attention to the correlation between projected promises and actual realities Situated at the crossroads of boundary work we invite articles that will deploy a range of interdisciplinary frameworks like RANAS Risk Attitude Norms Ability and Self regulation APIE Awareness Participation Involvement and Engagement HUPE Historical Urban Political Ecology etc to demonstrate coupled sociohydrological and hydrosocial realities and in turn getting informed by empirical insights emanating from these actual water interventions The final aim of the special issue is not to showcase water just actual interventions but to elicit a rigorous mapping of sustainable processes facilitating collective co production of resilient water trajectories

*Critical Microscopy* Alfred Charles Coles,1921      *Critical Reviews in Biochemistry* Chemical Rubber Company,1982      *Consumers' Research Bulletin* ,1939      *Worldwide Abstracts of Published Papers Pertaining to Contact Lenses* ,1963      *American Educational Research Association Annual Meeting Program* American Educational Research Association,2007      ***The Photographic Journal*** ,1915 Vols for 1853 include the transactions of the Royal Photographic Society of Great Britain      ***Journal of the Photographic Society of London*** ,1915 Vols for 1853 include the transactions of the Royal Photographic Society of Great Britain      *Journal of the American Optometric Association* American Optometric Association,1980      *Colliery Guardian, and Journal of the Coal and Iron Trades* ,1922      *Encyclopedia of Gender and Information Technology* Eileen M. Trauth,2006 Provides a comprehensive perspective on the way gender and information technology impact each other This two volume encyclopedia contains several key terms and their definitions in order to supply readers with the an understanding of the subject      ***Toward Higher Ground*** Peter D. Eckel,2006 A PANAL OF COLLEGE PRESIDENT GATHER TO DISCUSS WAYS OF MAKING A COLLEGE A BETTER ENVIROMENT      ***Teacher Education*** Anthony Selkirk,Maria Tichenor,2009 This work evaluates teacher professional development programmes These programmes are evaluated in terms of participants classroom teaching behaviour as assessed by their school students perceptions of their classroom learning environments      ***British Medical Journal*** ,1924

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