

Exploring Themes, Trends, and Frameworks: A Meta-Analysis of Online Business Education Research

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Abstract

The growth of online education has become a global phenomenon driven by emergence of new technologies, widespread adoption of the Internet, and intensifying demand for a skilled workforce for a digital economy. Online education is no longer a trend; it is slowly but surely becoming mainstream by 2025. This paper explores all efforts, accomplishments, issues, challenges, conclusions, and recommendations on this theme through meta-analysis of over 100 published papers since 2000. Through thorough content analysis, we provide useful recommendations for researchers and practitioners working in academia, industry, or government. We also propose a holistic model of interactions between diverse entities and stakeholders in the online tertiary business discipline education industry. This model will certainly be applicable with minor changes to other disciplines and other levels of education—primary and secondary. This model can be tested in piecemeal fashion by researchers using appropriate research methodology.

Keywords: Online education, e-learning, blended education, synchronous learning, asynchronous learning.

Introduction

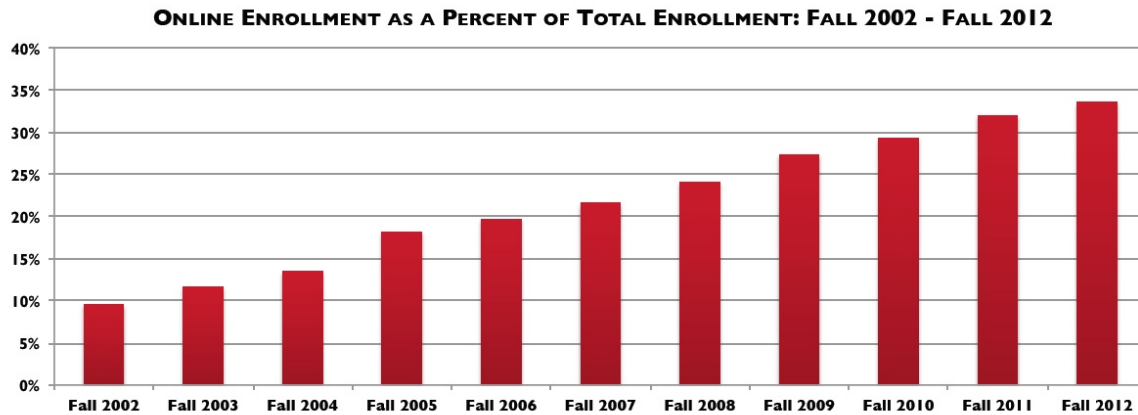
The ubiquity of information technology has impacted almost all aspects of our lives: the way we work, interact with others, process, analyze, and share information. E-evolution or e-revolution (Palvia, 2013) has witnessed e-mails, e-commerce, e-government, and now e-education. E-education, or online education, is changing the way we approach teaching and learning. Changes in education delivery models have been profound. As institutions worldwide adapt to these advances in IT, these advances have created a very dynamic education landscape that has generated huge interest among researchers, educators, administrators, policymakers, publishers, and businesses.

Online education evolved from correspondence courses in England in the mid-19th century. The current form of online education started in the 1990s with the advent of the Internet and World Wide Web and continued to develop as information and communication technologies advanced and became more sophisticated. Dziuban and Picciano (2015) describe the evolution of online education in four phases.

- **First** phase began in the 1990s with the advent of the Internet. Universities like Penn State World Campus and the University of Maryland College, which already had well established distance

education programs, were able to progress to online education by leveraging the capabilities afforded by the Internet. During this time many for-profit universities, such as the University of Phoenix, also entered the online education market. The demand grew steadily and by 2002 approximately 1.6 million students in the U.S. were enrolled in at least one online course (Allen and Seaman, 2015).

- **Second** phase was between 2000 and 2007 when online education became mainstream. The development of Learning Management Systems (LMS) made it possible for universities to quickly expand their online education offerings. The Babson Survey Research Group estimated that by 2008 approximately 4.6 million students in the U.S. were enrolled in at least one online course. The percentage of students enrolled in any distance learning course at the undergraduate level increased from 15.6 percent in 2003-2004 to 26.6 percent in 2013, whereas the percentage of graduate students increased from 16.5 percent to 30.9 percent during the same period.
- **Third** phase is referred to as the MOOC phenomenon (2008-2013) by Dziuban and Picciano (2015). The third wave of online education saw tremendous growth in the number of students taking online courses, and a new model of online education called “MOOC” (Massive Open Online Courses) evolved. The Oxford Dictionary Online defines a MOOC as: “A course of study made available over the Internet without charge to a very large number of people.” The MOOCs are a different model of online education, where the goal is to offer online education at a large scale with no or very little cost to students. Several MOOC platforms, like Udacity, Coursera, and EdX, emerged. MOOCs attracted a lot of attention from policymakers, investors and the academic community. Despite the hype, MOOCs were not very successful because of ineffective pedagogical models and high dropout rates. The percentage of institutions offering MOOCs has increased slightly over the years, but still remains very small: In 2012, only 2.6% of institutions were offering MOOCs. The numbers went up to 5.0% in 2013, 8% in 2014, and 11.3% in 2015 (Allen and Seaman, 2016). By the end of 2012 more than 7 million students were enrolled in online courses at public and private institutions in the U.S., with a majority of students enrolled in for-profit and private institutions. Additionally, hundreds of thousands of students from all over the world were also enrolled in MOOCs. The graph below shows growth in online enrollments (online college courses, doesn't include enrollments in MOOCs) from 2002 to 2012 (Allen and Seaman, 2013).
- **Fourth** phase of online education is the period after 2014. During this time, online education enrollments continued to grow, outpacing traditional higher education enrollments. According to the Babson Survey Research Report (Allen and Seaman, 2016), by Fall 2013, one in every eight students enrolled in colleges and universities in U.S. was studying completely online, and one in every four students took at least one online course. An interesting development was a 9% increase in enrollments at public institutions, whereas private, for-profit institutions experienced a decrease of more than 10%. Public institutions now enroll 48% of their students taking all of their courses online. Public institutions command the largest portion of distance education students, with 72.7% of undergraduate and 38.7% of graduate-level distance students. Also, there was a significant increase in the students enrolled in online undergraduate courses, from 15.6 percent in 2003-2004 to 26.6 percent in 2013, whereas the percentage of graduate students increased from 16.5 percent to 30.9 percent during the same period.



Source: Allen & Seaman (2013)

<http://www.onlinelearningsurvey.com/reports/changingcourse.pdf>

This rich and diverse history of online education has produced a substantial body of research, examining different aspects of online education. Research related to online business education was initiated in 1990s by IS researchers like Alavi and Leidner, focusing on technology-mediated learning (Alavi, 1994; Alavi and Leidner, 2001), and over the years there has been increasing interest in online business education research. In recent years, many conferences and journals have had themes and special issues focusing on online education.

Why Meta-Analysis?

The purpose of this study is to do a comprehensive meta-analysis of research into online business education at a tertiary level to identify common themes, trends, methods, and issues. Among several research methodologies available, meta-analysis of extant literature is an expeditious approach to grasp the role of various theories, models, methodologies, and statistical tools in comprehending diverse issues on a research theme. This research methodology avoids reinventing the wheel when already adequate research on a theme or specific topic already exists. We only found four studies that did a meta-analysis of research on online education and only two (Arbaugh, 2009; 2014) that specifically focused on online business education in the business discipline.

The first study, by Bernard et al. (2004), is a meta-analysis of the distance education literature between 1985 and 2002. In total, 232 studies containing 688 independent outcomes in three areas: achievement, attitude, and retention, were measured and analyzed. Results suggest that many applications of distance education outperform their classroom counterparts and that many underperform. Dividing achievement outcomes into synchronous and asynchronous forms of distance education produced a somewhat different impression. In general, mean achievement effect for synchronous applications favored classroom instruction, while effect for asynchronous applications favored distance education. However, significant heterogeneity remained in each subset. In two other recent studies, Bernard et al. (2009; 2014) conducted a meta-analysis examining the effectiveness of three forms of interactions (student-student, student-teacher, and student-content) and a review of comparative studies of blended education in higher education.

Arbaugh et al. (2009) reviewed 182 articles on blended and online learning published in business journals between 2000 and 2008. The authors found that even though there has been a significant increase in research in online business education in the past decade, the research has been uneven within the business disciplines. Most of the articles reviewed focused on either comparative studies or studies examining factors influencing course outcomes. The authors note that the gaps in current research present many opportunities for business researchers.

The third study examines the effectiveness of online education by reviewing online education research from a global perspective. Zawacki-Richter, Backer, and Vogt (2009) reviewed 695 articles published during

2000-2008. They concluded that “distance education research is strongly dominated by issues related to instructional design and individual learning processes; whereas, other important areas (e.g., innovation and change management or intercultural aspects of distance learning) are dreadfully neglected. There is a significant trend towards collaborative research and more qualitative studies. Over 80% of all articles originate from only five countries.” The study reviews articles only from the five most prominent and recognized journals in the field of distance education journals: *Open Learning* (OL), *Distance Education* (DE), the *American Journal of Distance Education* (AJDE), the *Journal of Distance Education* (JDE), and the *International Review of Research in Open and Distance Learning* (IRRODL).

In the fourth study, Arbaugh (2014) reviewed 60 articles specifically focusing on blended education. The meta-analysis of articles suggested three key findings: first, blended learning is viewed more positively than online education. Second, students’ attitudes towards technology may be more influenced by peers, rather than to online courses. Third, learner control is more prominent in blended learning formats. The prominent research topics were comparative studies examining learning outcomes in online and blended formats, course design considerations and effectiveness for different blended formats, and students’ attitudes and usage of technology. The author notes that most of the studies reviewed in this paper used the Technology Acceptance model (TAM) to assess participants’ attitude and satisfaction with technology. The author identifies many gaps in research and suggests opportunities for future research.

How is Our Study Different?

Given the current trends in online business education, our study is both timely and significant for several reasons. First, given that so far only two studies have conducted a meta-analysis of online business education research, our study will help advance research in this area. Second, it goes beyond the year 2008, which is crucial since most online innovations and proliferation have happened since 2008. The previous two studies have reviewed articles from 2000 to 2008 only; we have reviewed publications from 2000 to 2016. Third, in the context of the explosion of distance education since 2008, we want to analyze much more than five journals. Since our emphasis is on business education, we will analyze journals in all business disciplines over and beyond journals devoted exclusively to online education. Fourth, it is a structured global study and would provide a broader perspective of the state of online education research in business. The study will include data from five regions of the world—North America, Europe, South America, Asia, Asia-Pacific, and Africa. Finally, the study will help us understand the current state of online education research in business disciplines and identify gaps to advance future research. The study aims to address the following broad research questions:

- What are the common themes/topics in online business education research?
- What are the publication patterns?
- What are the common methodologies being used?
- What are the common frameworks being used and tested?
- Are there any differences in themes and methodologies across different regions?
- What are the gaps in current research?

Methodology

We have focused on articles that address issues pertaining to online learning in the business disciplines. We define online learning to include teaching and learning in synchronous and asynchronous formats, blended, or hybrid modes. Business disciplines in this research include Accounting, Economics, Entrepreneurship, Finance, Information Systems, Management, Marketing, and Operations and Supply Chain. Interdisciplinary studies in the business fields or non-disciplinary general business studies are also included in this research. Driven by our passion to find out the extent to which online education research is going on worldwide, we are curious to find out if the research is happening in only a few countries and if there is research collaboration going on within an institution and across institutions and countries. We searched for articles in major business academic databases, such as ABI/Inform Global, Business Source Complete, EBSCO Host, LexisNexis Business, and Google Scholar. The search is limited to the 2005-2016 time frame.

We have included both conceptual and empirical studies. While conceptual studies are important to identify ideas being discussed, empirical studies will help us to understand if the ideas are being tested and working in real world. We also examine the unit of analysis in the studies—a single course; an entire degree program (like MBA or MS in Taxation) offered by a school or a university department; or all programs offered by a university or distance education (like Phoenix online, or IGONOU). Three categories of online education are defined as: web-enhanced (availability of majority of course material online, i.e., less than 20% online); blended (20% to 80% online instruction); and online (100% online instruction). Other concepts and classifications that may be utilized in our meta-analysis include instructional versus interaction technologies (<http://www.christenseninstitute.org/blog/two-types-of-online-learning/>) and online education according to learning styles (<http://eric.ed.gov/?id=ED462940>). From our meta-analysis, we hope to study the disciplines and departments that have taken the lead in offering online programs. Further, at the industry level we would learn whether incumbents have advantages (first mover advantage) over new colleges or universities, or are the new players challenging the hegemony of existing players (fast followers)?

Content Analysis

To conserve space, elaborate tables are not being provided. Also, several categories are being combined.

Authorship, Coverage and Currency

Most of the articles have multiple authors, two to three being most common. The average number of references for each of the 74 articles reviewed is 42, totaling more than 3,000 references, and few of these references are repeats. About 46 out of 74 reviewed articles are very current—2014 and beyond. Only 7 articles are from 2005 or earlier.

Context – Conceptual, Country or Global

A majority of papers (58%) are specific or tangential to country context of the U.S. Five percent focus on India. Some papers were descriptive and conceptual. Very few papers had a global context.

Theories Utilized

In our analysis, we found that most of the papers do not use any theory. The theories and models discussed in the papers are Adaptive Structuration Theory, Community of Inquiry, Technology Acceptance Model (TAM), Hofstede Culture Dimension of Power Distance, Knowle's Theory of Andragogy, Mezirow's (1997) Transformational Learning Theory, Motivational theory of Uses and Gratification, Networking Effect, Socratic Questioning and Conversation theory, Theory of Reasoned Action, Trans-Theoretical Model (TTM), Tuomi's Model, Theory of Self-Determination, Control Value Theory, Social Cognitive theory, Resource Based Value (RBV) theory, Innovation Diffusion theory, and Attention/Relevance/Confidence/Satisfaction Model.

Research Methodologies Used

We classified studies according to type of study—descriptive, explanatory, or exploratory. About 26 articles were descriptive in nature, about 17 studies were explanatory, and remaining 31 studies were exploratory. Four of the papers were experiential in nature; they were from the experience of introducing new courses or programs. Eleven papers were based on literature survey, 48 were based on primary data including surveys and cases studies, and 11 papers were based on secondary data.

Type of Analysis

Analysis in a research paper can be broadly divided into two categories—qualitative and quantitative. A qualitative study can also be labeled as a conceptual or theoretical paper. A qualitative study can also be empirical, such as a case study to test a hypothesis. One can analyze qualitative data or quantitative data.

Qualitative data can be observed behavior of people, performance of jobs, utilization of organizational processes, etc. We can do simple statistical analyses of qualitative data (nominal) also. Advanced and complex statistical analysis is done on quantitative data (ordinal, interval, or ratio). The papers we reviewed had all kinds of analyses. Qualitative analyses included case studies, content analysis, and theory building. Quantitative analyses included regression, descriptive statistical, inferential statistical, correlation, structured equation modeling, Cronbach's alpha, and many more.

Key Findings

One of the main objectives of a systematic review of literature is to assimilate the key findings of the different studies. The purpose of this study is to consolidate perspectives on the status, issues, and challenges facing disruptive technology of online education. We decided to break up the summaries in three categories of articles: Conceptual/Descriptive, Empirical Studies, and Theoretical (Models and/or Hypotheses Testing)). These three research methodologies provided different insights in terms of breadth and depth, rigor and relevance, local and global.

Summaries of Conceptual/Descriptive Papers

Natale and Libertella (2016) take a hard stance on online education in terms of its ability to offer and sustain a "Moral Compass" for students. Online learning is linear and can never (presumably professor with his/her ethical and moral values) match F2F's rich medium that helps in forming lifelong bonds and communities. Traditional learning in a college environment is holistic learning (if students live on campus). The article focuses on the role of faculty in providing affective, moral, ethical learning for students. The article primarily focuses on areas in which online learning is deficient. McPherson and Bacow (2015) refer to a five steps process for any innovation to be accepted (if at all) by diverse stakeholders at different levels: (a) initial trigger, (b) inflated expectations (hype), (c) trough of disillusionment, (d) slope of enlightenment, and (e) plateau of productivity. These five steps are akin to the S-shaped learning curve. The authors also discuss online learning and teaching by selective (quality focus) versus non-selective institutions (cost focus) using asynchronous, synchronous, flipped, blended, or online modes. It compares traditional education with e-education. They also raise issues regarding "fit" of education mode based on teacher, student, and course characteristics and discuss causes of resistance by faculty. Navarro (2015) explains that there are multiple ways to evolve into the e-education world—flipped, blended, online, and various combinations thereof. MOOCs can be very costly to develop—options are build, buy, collaborate, or outsource to so-called "enablers" who typically receive 80% of the tuition revenue. One big question is who owns the intellectual property rights to online course content, professors or university administrators? The authors articulate Ten Commandments to follow to develop and use MOOCs successfully. Research professors can use blended or flipped models, while teaching professors can find ways and means to explore online education and evolve from "sage on the stage" model to "cyber guide on the side" model. Some prescriptions are provided for chairpersons and deans, chief academic officers, and university presidents. One recommendation is that instead of hoping for professors to volunteer to teach online courses, they should be recruited.

Roe, Toma, and Yallapragada (2015) document the process used by Arkansas University faculty to design, develop, and launch a high quality and now successful online MBA program. One idea worth noting is to price an online program appropriately in the range of lowest to highest priced online MBA programs based on the institution's brand image and ranking. The authors give nine recommendations, including piloting the online program for your current traditional MBA students before marketing for outside enrollments. They provide good suggestions for integrity and academic honesty in the administration of assignments, quizzes, and exams. Christ, Arsenault, and Gault (2015) examine the benefit of on-site experience programs within an online MBA program. The physical classroom delivery may happen in home-campus or any facility, such as a hotel. The study indicates that there are benefits in the residency programs as it allows direct engagement with students, fosters engagement between students, and can customize learning goals of the program. Some sessions, especially on team building, can be conducted during residency programs. Cordeiro and Muraoka (2015) is a case study research explore how a university made policy and procedural decisions to build an online MBA program. The study discusses how the resources were developed and necessary approvals were obtained. Docq (2015) narrates the experience of three professors from

competing schools who started a collaborative initiative in online learning. The initiative resulted in designing a hybrid online program for training professionals and organizing inter-university training. The paper presents the complete process of design and implementation of a 60 credit course.

Dodson, Kitburi, and Berge (2015) examine three options for use of MOOCs by corporates for employee training purpose: (a) take advantage of existing MOOCs to supplement employees' development; (b) develop MOOCs as an opportunity to market your company's offerings to potential clients, business partners, or end users; and (c) implement "MOOC-Like" solutions in existing and future corporate training. The paper identifies factors that help decide if and how a MOOC may be used in an organization. Deming et al. (2015) provides a glimpse into the demographics of online education students taking courses from non-selective public and private institutions. It also describes evolving history of regulations for online education (OLE) in the U.S. Such country regulations do have an impact on the growth and direction of OLE. The authors mention several OLE designs—blended, flipped, completely online, and possible combinations of these. The primary focus of the article is to analyze the impact on costs for students from traditional and OL modes. Costs of online education are going down mainly because of scalability with almost zero marginal cost, whereas the costs are steady for traditional education. Cook and Sonnenberg (2014) design and present mobile awareness models with an objective to understand mobile device technology changes and their usage for online learning. The paper classifies technology innovation in three phases—Incremental phase (1960-80), semi-radical phase (1990-2010), and disruptive phase (2010 - present). They also discuss three models to evolve into OLE—Technology Change model, Mobile Awareness model, and Transformative Technologies model. **About 5 papers not included due to space constraint.**

Summary of Empirical Papers

Sebastianelli, Swift, and Tamimi (2015) assesses the impact of six factors—course content, course structure, course rigor, professor-student interaction, student-student interaction, and mentoring support on three outcomes: learning, satisfaction, and quality. Structured Equation Modelling (SEM) has been utilized for thorough analysis. Past literature identifying success factors for online education has been cited. Results reveal statistical significance for course content on learning; course content and professor-student interaction on satisfaction; and course content, student-student interaction, and mentoring support on perceived quality of outcome. In Sohn and Romal (2015), performance of students in an undergraduate economics course in two modes of "online" and "traditional F2F" is compared with gender, prior economics courses taken, and mathematics ability as moderators. A switching model (Trawick et al., 2010) has been used to predict how two groups of students when switched from one mode to another midway through the course will perform. Students chose the mode of learning they preferred; for "performance" comparison, this creates "self-selection" bias and is hard to analyze. Florenthal (2016) focuses on the students' perceived value of, attitude towards, and satisfaction from completing online interactive assignments. It documents various theories used by previous publications to assess e-education acceptance. The theories mentioned are: TAM, Motivational Model, Social Cognitive theory, Resource Based Value (RBV) theory, Innovation Diffusion theory, and the Attention/Relevance/Confidence/Satisfaction Model. There is ongoing debate among researchers about using simple (parsimonious) versus complex (holistic) models/frameworks to understand any phenomenon/technology including e-education. Based on erring on the side of holistic model, this article tests eight hypotheses that connect eight variables—perceived ease of use, result demonstrability, confirmation of expectation, perceived value, attitude, credibility, irritation, and satisfaction. Most of the hypotheses are supported through a survey of 156 university undergraduate students over six semesters. Zhang (2013) addresses issues concerning students' cultural differences in regard to F2F versus online education. Hofstede's cultural dimension of Power Distance has been found to influence engagement and interaction of so called Chinese Learners. Such learners exist in different geographical regions, as well as in different political systems. Four themes that emerged through interviews with such Chinese learners in a university are: (a) engagement in online discussion improved (compared to F2F); (b) expectation of higher involvement of instructors in online environment; (c) fear of written communication through written e-mails, etc.; and (d) communication with peers was less intimidating. **About 40 papers are not included due to space constraint.**

Summaries of Theoretical Papers

Malathi Sriram essentially compares four MOOC platforms—Coursera, edX, Udacity, and FutureLearn. The paper provides information about the use of MOOCs according to different disciplines and providers. Three prominent areas of MOOC deployment are: Computer Science, Business and Management, and Humanities. The four MOOC platforms are compared on six criteria: profit or not for profit, accreditation, mobile Pplatform, number of registered students, type of courses offered, and platform technology (Proprietary versus Open Source). In Whitaker, New, and Ireland (2016), the question debated is, has IT transformed management education? There are arguments on both sides, and the jury is still out. The approach taken by this article is similar to the approach our meta-analysis research takes. The three factors that affect learning in the online mode, identified through the lens of Adaptive Structuration Theory (AST), are: technology, people (students and professors), and environment (internal and external). This article provides excellent summary of past research in various areas/themes of online education. Nti (2015) focuses on the needs of learners from developing countries on issues of content, location, process, timing and duration of learning. Evans (2013) compared graduate students' perceptions of learning effectiveness in online and face-to-face courses. The results indicated that students had lower perceptions of learning effectiveness in online MBA courses. The author notes that the differences in perceptions of learning effectiveness were due to differences in student support, social skills and quality of instruction. Students perceived face-to-face classes to be more detailed and indicated a higher level of satisfaction with communication compared to face-to-face course. Additionally, the students felt that they received a higher level of details and student support in F2F courses compared to the online courses. Fong (2015) describes how role-play and simulation can be used as appropriate learning techniques for dealing with sensitive topics and issues in a business ethics unit. The author evaluates the use of The Audience Response System (ARS), online discussion boards and blogs, and wikis for their suitability in supporting online role-play and simulation. The author argues that the anonymity, response-time flexibility, and discussion structure in asynchronous online discussion boards and blogs are ideal for the intended learning purposes.

About 10 articles not summarized due to space constraint.

Evolving Holistic Model of Online Education

This model is akin to the concepts in Whitaker, New, and Ireland (2016). We break up online education factors into five levels (Figure 1): Micro, Program, Institutional, National, and Global. At the Micro level, four factors that interact with each other are: Technology, Students, Courses, and Professors working towards achieving desired learning outcomes. For students, the sub-factors include motivation, culture, learning style, and IT skill level. For professors, the component factors include (but are not limited to) role (moving from “sage on the stage” to “cyber guide on the side”) or teaching mode (cognitive, affective, managerial) and IT skill level. Course factor typically include discipline, learning outcomes using perhaps Bloom's well-known taxonomy. Technology characteristics that can be considered are platform (LMS type) used and perceived usefulness, perceived ease of use). Curricular program level ought to include sub-factors like level (freshman, sophomore, junior, senior, graduate), part time or full time, normal or executive program, and online mode (blended, flipped, fully online, and degree of synchronous/asynchronous). Institutional factors will include support from administration, marketing, technology, and top management; institutional culture (entrepreneurial, hierarchical, etc.), selective versus non-selective institution, public versus private, and for profit versus not for profit. External environmental factors include industry (business) and government at local, state, and federal levels. Corporate and government sector determines employability of online program graduates. Also, local and state government make regulations in regard to all educational programs and initiatives including online education. Environmental factors also include laws, ICT capacity, Internet/mobile technology diffusion, income divide, and digital divide. Finally, at a global level, online education's reach can be global only if there are standard technology platforms (like Internet), bridging of the digital divide, accommodation of diverse languages and cultures, and standard curriculum and evaluation processes.

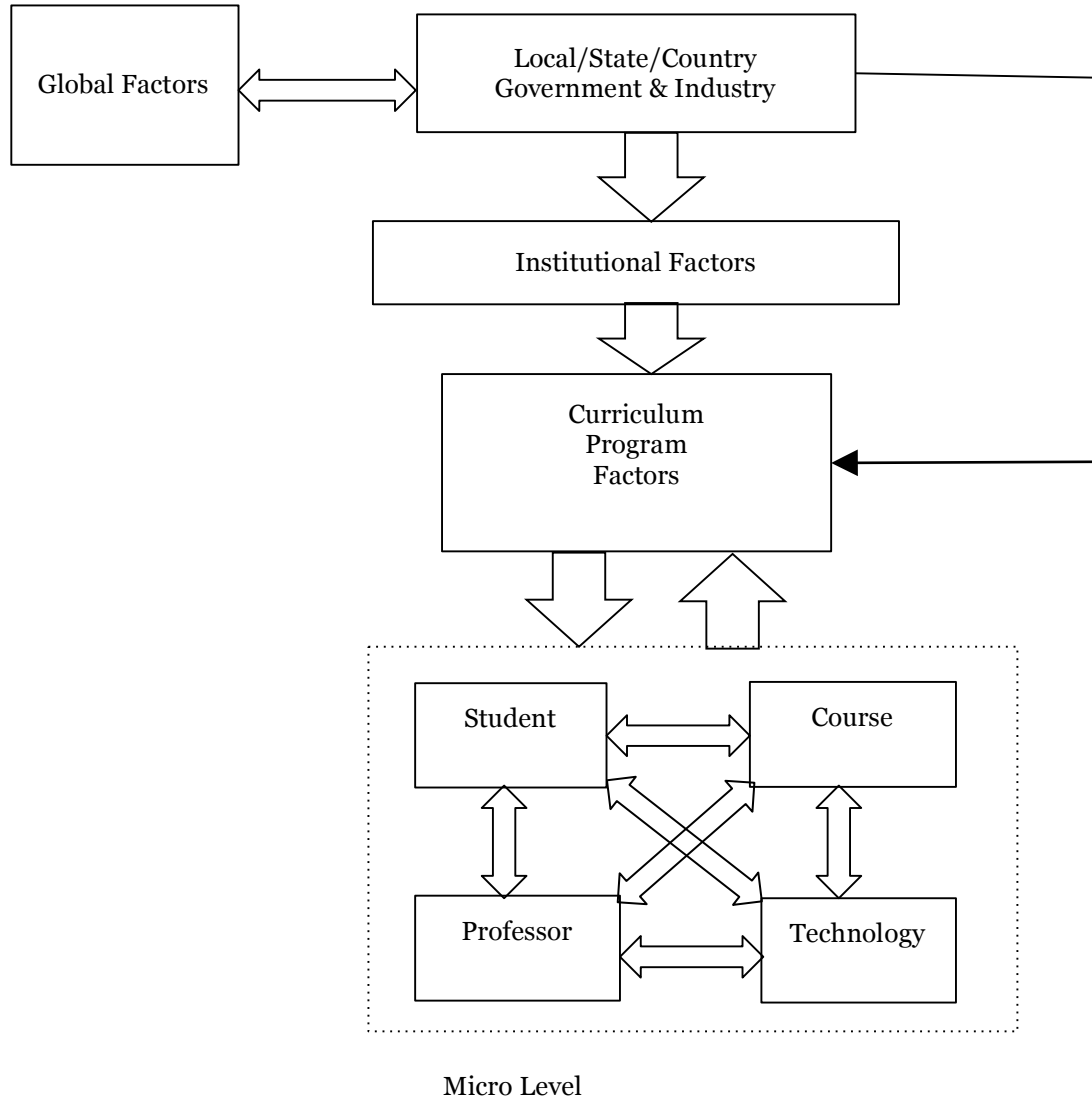


Figure 1: Evolving Holistic E-Model of Global E-Education

Implications for Academia, Industry, Government, and Society

This study conducted a meta-analysis of extant research related to online education in business to explore common topics that are being examined and to identify gaps in existing research. The findings indicate that there are some common themes dominating this area of research. The issue of quality in online courses appeared to be the most prevalent topic. Most of the articles conducted comparative studies examining effectiveness of face-to-face and online/blended formats, student perceptions of their online experiences, and learning outcomes. Collectively, these studies suggest that overall online learning is viewed favorably by students and learning outcomes are comparable in online and F2F formats. Very few studies examined institutional, societal, and cultural factors related to online education in business.

These findings have important implications for both research and practice. The results of our meta-analysis suggest that while this area of research has attracted the attention of business scholars, the range of topics and themes remain limited. The majority of the research is conducted at the course level and very few articles addressed program or institutional level issues. Surprisingly, we did not come across many studies

that examine faculty perceptions and attitudes towards online education. Several reports over the years have shown that for the past decade faculty perceptions towards technology and online education haven't changed much and remain negative (Allen and Seaman, 2016). What are the possible factors influencing these perceptions, and how can we facilitate faculty buy in and acceptance of online education? Additionally, it is important to note that only a small percentage of the higher education institutions are offering the majority of the online programs. What are the institutional factors that facilitate the adoption of innovative educational delivery models and approaches? How do these factors differ based on country, type of institution, etc.? These existing gaps in the online education research provide many opportunities for research in the future.

The findings of this study also provide useful information for practitioners. The results suggest that the quality of education can be comparable in online/blended and F2F formats. These results can provide guidance for designing online and blended courses and programs. Further, the framework proposed in the paper provides a holistic view of online education and depicts how different factors can be considered in implementing online education programs. Finally, external stakeholders, such as potential employers and publishing houses, also need to understand how online education impacts the relationships. For example, potential employers need to be informed that the change of medium doesn't compromise the quality of students' experiences. Similarly, publishers need to collaborate with academia to explore new models developing interactive and multi-media rich content. It is clear that e-education has potential to be truly global, with faculty and students drawn from all over the world. But for this to happen, there is a need for standards in many areas—technology platforms, selection criteria for different programs, and curricula for different business disciplines.

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