Preface

The flipped classroom is an instructional approach that educators use to turn traditional classroom lecture model to a more active learning classroom. In the flipped model, the traditional practice of spending class time for direct instruction and completing content related activities for homework is “flipped.” The flipped classroom model frees up class time by removing much of the direct instruction so that the teacher is able to supervise collaborative learning experiences, provide individual remediation and foster meta-cognitive ability by providing the opportunity for communication among diverse learners (Songhao et al., 2011).

Hawks (2014) defines the concept as a pedagogical model the first part of which primarily relies on short asynchronous video lectures, reading assignments, practice problems, and other instructor recommended digital technology-based resources to engage students outside of the classroom. Further, the second part of the concept relies on the use of active, interactive, group-based, and other problem-solving activities in classrooms in place of traditional direct lectures. The flipped form of learning can support multiple pedagogic approaches especially where participatory and social technologies are harnessed to support and transform the learning experiences. The result, according to a growing body of research, is more learning.

The notion of a flipped classroom draws on such concepts as active learning, student engagement, hybrid course design, and course podcasting. The value of a flipped class is in the repurposing of class time into a workshop where students can inquire about lecture content, test their skills in applying knowledge, and interact with one another in hands-on activities. During class sessions, instructors function as coaches or advisors, encouraging students in individual inquiry and collaborative effort. Additionally, flipping seeks to put the learner actively at the center of a course instead of the teacher. The focus on active learning is grounded on solid pedagogical models that require teachers to think about what students are learning, the process of learning, the environments supporting student learning, and ways in which current learning position the students for future learning (Weimer, 2002).

The concept of flipped classroom is gaining popularity, perhaps due to the ubiquitous presence of technology tools that teachers use to accomplish the flip such as iTunes, YouTube, iPads, and many Learning Management Systems (LMS). The integration of these learning technologies into classroom instruction, particularly multimedia, provides new opportunities for student learning. Additionally, the current generation of students are accustomed to interacting with audio and video on electronic devices, so it reasonable to argue that they would digest educational content in this manner as well.

The flipped approach is also fast becoming a preferred teaching strategy for a growing number of instructors. These instructors are finding it useful as a means to improving their students’ mastery of content through the opportunities presented for enhanced students’ interaction and engagement with con-
tent. Even so, there is need for focused dialogue and examination on strategies and instructional design practices appropriate for the flipped classroom model as well as the need to understand this pedagogical approach and its potential for improving student learning.

Digital technology has never been a basic part of the educational process worldwide (Warschauer & Grimes, 2008). Tremendous improvement in digital technologies has created tremendous opportunities for faculty to experiment with innovative teaching approaches beyond the traditional classroom lecture to include flipped learning. However, Instructors who plan to flip their classes need to address questions regarding the amount and kinds of resources needed as well as how to create relevant content when needed (Bergmann, 2014). Further, in the paradigm shift from the traditional lecture method to flipped learning, it is critical for faculty not only strive to learn the technologies associated with flipped learning, but also understand the need to fundamentally change and transform their pedagogical approaches to better meet the needs of the digital learners.

The flipped classroom model contains “inexorable logic” (Pink, 2010), but little research has been conducted on the approach in a holistic educational setting. Moreover, most educators agree that there are multitudes of ways to flip a classroom although the underlying premise is that students review content information outside of class. To this end, there is need for focused dialogue and in-depth examination on strategies and instructional design practices appropriate for the flipped classroom model and a deliberate effort to understand this emerging pedagogical approach and its potential to improve student learning. Therefore, *Handbook of Research on Active Learning and the Flipped Classroom Model in the Digital Age* examines the benefits, shortcomings, perceptions, and academic results of this teaching method.

Chapter One presents a meta level review of emerging and emergent challenges of integrating online resources to flip the learning in higher education as well as recommendations for the reorientation of prevailing learner, educator and institutional cultures and contexts to facilitate learner centred, autonomous, and flexible learning experiences.

Chapter Two (framed within a social constructivist stance that examines the nature of dialogic meaning making and hybrid teaching) presents a reflective case study of a specific instance of hybrid teaching with preservice teachers in a graduate course on the languages and literacies of bilingual elementary children.

Chapter Three examines a flipped classroom teaching approach that was used in the teaching of college algebra within a broader initiative for mathematics learning. The flipped classroom approach was documented as an integrated teaching model acknowledging multiple teaching approaches, including in-class cooperative learning, mentored laboratory activities, and online teaching videos.

Chapter Four examines concerns that flipped classes likely burden instructors and students especially those in rural and urban areas who may lack the resources needed to benefit from this strategy. Further, the author prescribes resources and procedures that could be useful to individuals interested in flipped classrooms.

Chapter Five examines the instructional design process model -- ADDIE, and nine flipped course design principles, which when used in parallel, offer a means to support the development and implementation of a hybrid or flipped classroom. Additionally, a partial example of how two frameworks may be applied to the re-design of a fully online course into a flipped or hybrid course is demonstrated, and emergent design-consideration questions are offered.

Chapter Six reviews the benefits of flipped learning in environments where more instructors continue to adopt instructional design models of mobile learning as more learners also bring their mobile devices to their classrooms. The findings described in this chapter also suggest that introducing mobile learning to learners in a flipped classroom model helps to bridge learner entry behavior as improves learner performance.
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Chapter Seven explores the potential of the Flipped Classroom model in K-5 settings based upon a professional development framework for a project centered on two goals. First, the authors sought to teach the flipped classroom model through an integrated literacy and math approach while “mathematizing” read-aloud instruction for primary and elementary grade educators. Secondly, the authors describe efforts to expand teachers’ repertoire of effective instructional, blended technology tools for teaching math and literacy.

Chapter Eight discusses faculty progress and perspectives of technology enhancements to transform the delivery of their own existing courses into new and improved courses which could be delivered consistently over time and in a variety of delivery modes (i.e., face-to-face, online, or hybrid), while maintaining course rigor. Additionally, some implications for working with faculty from a variety of levels of willingness and technological proficiency for developing effective online learning environments are provided.

Chapter Nine examines the notion of “active learning” through Wilber’s Integral AQAL Model and through two learning models based on AQAL. Further, the authors demonstrate, through the development of a rubric to gauge students’ “activeness”, the complexity of what is involved in the teaching and learning process when one becomes mindful of the perspectives and levels (AQAL) that are present for every student to help teachers be mindful of the multiple perspectives that influence learning.

Chapter Ten sought to investigate the relationship between working with multiple Web 2.0 tools and student task completion activities (following discussion threads, team work, and meeting assignment deadlines) in a network learning environment (NLE), what Web 2.0 tools students prefer the most in online learning environments, whether there is any gender difference in terms of task completion, and which activities presented more challenge to participants.

Chapter Eleven discusses the effective use of feedback in online learning including guidelines for providing quality feedback to maximum benefit by the learners. Additionally, various types of feedback suitable for a range of contexts as well as techniques and technologies that enable detailed feedback to be delivered quickly to learners are presented and discussed respectively.

Chapter Twelve provides some literature review on learner-centered learning theories such as active learning and collaborative learning that augment traditional teacher-centered approaches and are highly supported by Web 2.0 technologies. Additionally, this chapter discusses how online collaborative learning can be integrated in a flipped classroom.

Chapter Thirteen addresses key pedagogical strategies used to support online learning experiences through the lenses of evidence-based educational theories. Additionally, the TPACK framework, which asserts that instruction requires the interplay of technological knowledge, content knowledge, and pedagogical knowledge, is used to analyze students’ perceptions of flipped and double flipped online courses.

Chapter Fourteen examines the need to employ active learning and the flipped classroom model in educational settings in developing countries particularly in Saudi Arabia. Specifically, this chapter examines the concept and importance of Active Learning and the Flipped Classroom Model and reviews the efforts and readiness of educational settings for implementing these instructional approaches. Additionally, primary challenges that might hinder the implementation of active Learning and the Flipped Classroom Model are suggested.

Chapter Fifteen examines the status of teacher preparation in technology and explores current trends for instructors of the NextGen educator. Further the authors examine how 21 Century Skills and global competencies among pre-service teachers can be applied in an online learning environment in teacher education programs.
Chapter Sixteen presents the development of a flipped classroom in a higher education STEM course, and describes the iterative process and subsequent structure of the course over several years. The use of alternate classroom structures such as flipped learning to create student-centered learning environments is appropriate in STEM education.

Chapter Seventeen examines shaping the future of education related to UNESCO Post-2015 including the need to encourage lifelong learning and thereby build inclusive, sustainable, and prosperous societies. Further, proactive and innovative strategies are required to fully embrace the open learning culture in a manner that aligns with the global driving forces for the development of the individual, society, and the world in general.

Chapter Eighteen identifies some of the common challenges in implementing the flipped classroom model and offers a partial example to illustrate ways to address some of these challenges in ‘flipping’ the classroom in a first-year university course.

Chapter Nineteen presents approaches that can be used by faculty members to adapt and integrate Massive Online Open Courses (MOOCs) in order to enhance the quality of computer science education. These approaches are the first steps towards helping faculty members and institutions in Sub-Saharan Africa to utilize the potential of MOOCs to improve the quality of computer science education and to equip students with employable skills for both local and international IT industry.

Chapter Twenty explores the design of a framework for up-scaling a lecturer professional development strategy based upon communities of practice from pockets of excellence to span across a university utilizing a cMOOC framework. This framework links global experts into an authentic professional development experience via the integration of a range of mobile social media learning technologies.

In summary, many institutions of learning are continually pressed to find new and creative ways to enhance student learning…and flipped classroom model is an approach that holds such promise. Additionally, there is a focus on active strategies to effectively serve the needs of the digital learners in modern technology-rich classrooms. To that end, the focus of this handbook explores the effectiveness of the flipped classroom model as an alternative pedagogical approach to innovative teaching and learning. Providing research based practices and perspectives, this handbook can help educators make the connection between, active learning pedagogy and the flipped classroom model to maximize the teaching and learning process.

Similarly, this handbook will provide a wide range of strategies and frameworks to help educators and other educational researchers examine the benefits, challenges, and opportunities associated with the flipped classroom model. Finally, this handbook is intended to stimulate reflections on effective strategies to enhance faculty success in their transition from traditional pedagogical platforms to innovative approaches such as active learning and the flipped classroom model. Our hope is that each of these scholarly manuscripts will help to expand the understanding of the implementation of the flipped classroom model to enhance active student teaching and learning in the digital age.

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REFERENCES


