

## Preface

There is a paradigm shift in education from issues of accessing and sharing information to designing active and collaborative learning environments where participants are actively engaged in deep and meaningful learning (Vaughan, Cleveland-Innes, & Garrison, 2013). Active learning is grounded on the constructivist theory that emphasizes hands-on, activity-based teaching and learning during which students develop their own frames of thought. Key forms of active learning include discovery learning, problem-based learning, experiential learning, and inquiry-based instruction (Kirschner, Sweller, & Clark, 2006).

Active learning provides opportunities for students to inquire, explore, experiment, collaborate, and experience the joy of discovery (Brooks & Brooks, 2001). Additionally, active learning incorporates learner-centered approaches; Teaching as a learner-centered process focuses on an individual's transformative development (Hinchliffe, 2001). The role of instructors shifts from that of transmitting knowledge to the new role of facilitating, guiding, or coaching. As a guide, the teacher incorporates mediation, modeling, and coaching as well as providing rich environments and learning experiences for collaborative learning (Sharp, 2006).

The learner-centered approach is based on the understanding that students learn more when they learn actively and take responsibility for their own learning (Henson, 2004). Learner-centered approaches focus on strategies to move beyond passive learning to active learning. Students should be encouraged to work with information to derive meaning and understanding, form new mental representations of the material, and construct and reconstruct new knowledge based on their experiences. Pierson and McNeil (2000) recommend the "purposeful creation of collaborative, authentic, and content-focused learning environments where future teachers are empowered to develop content, pedagogy, and technology strategies concurrently, as a critical factor in the design of preservice teacher education programs" (p. 9).

There is need to reform teacher education programs through the creation of active learning environments that support and improve the depth and scope of student learning. One way to help learners learn how to learn is to develop learning tasks that actively engage them and help them to develop higher order skills such as problem-solving and critical-thinking skills. Higher order skills are pivotal in helping learners become skilled at thinking purposefully and connecting life experiences to academic learning that might translate to meaningful learning (Novak, 1998).

The shift toward learner-centered teaching is a change in emphasis that will cause teachers to rethink how they teach and assess their teaching toward the goal of realistic appraisal of student learning. Some of the questions that teachers need to address when designing active learning environments include; to what extent do I establish classroom climates in which students feel free to ask questions, voice opinions, and express new ideas; to what extent do I provide experiences that actively engage students in learning;

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and to what extent do I design learning activities including assessments that provide for student choice? (Keengwe, Onchwari, & Onchwari, 2009). 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). Therefore, *Handbook of Research on Learner-Centered Pedagogy in Teacher Education and Professional Development* examines the benefits, the challenges, perceptions, and academic results of this active teaching and learning instructional method.

Chapter 1 presents a model for technology integration in learner-centered classrooms for educators, administrators, and policy makers. In this model, students are trained on how to use a technological tool but then given freedom to choose how much and in what specific content area they use the tool.

Chapter 2 highlights learner-centered pedagogical practices that share a common goal: to allow multilingual, multicultural, and nontraditional students to fully engage and demonstrate their growing knowledge of content as well as their ability to think critically—to ensure their success in future academic work and careers.

Chapter 3 examines the case of one urban public school district's efforts to provide coherent support for student-centered teaching across all the high schools, through the role of the Learning Leader.

Chapter 4 examines a redesign of two education courses to leverage new pedagogical understandings and new technologies to improve student learning. The result of this conversion was the creation of two new blended learning courses that were designed to be learner centered, constructivist, and reflective.

Chapter 5 examines four components of effective technology-integrated, learner-centered instruction as well as the critical role of teacher preparation programs in providing a model and experiences for teacher candidates.

Chapter 6 provides four practical examples and brief vignettes and specific support tools such as clear instructions, rubrics, procedural checklists, descriptions of digital writing assignments, and connections to theory and scholarship for those interested in including digital writing within teacher education courses, particularly online teacher education courses.

Chapter 7 examines ways that student learning attention can be measured and used as a tool to inform teachers in order to enable them manage the classroom and learning activities. Teaching and learning technologies draw learners' attention, motivating them and arousing their curiosity to be engaged in learning.

Chapter 8 explores perceptions of the role of teachers and students in learner-centered classrooms in a primary school in Namibia. Learner-centered teachers create learning environments that promote students' active engagement with learning and develop critical thinking skills.

Chapter 9 examines the importance of letting learners take the lead in their lifelong educational journey as well as creating new modes of learning in the digital era. The role of transfers and professional development of managers, leaders, and academics are discussed, as well as the need for the development of digital academic scholarship.

Chapter 10 reviews study findings that reveal that typical modes of professional development are ineffective at changing teacher practices and/or student learning. This chapter examines a learner-centered professional development model that is designed to maximize the impact of teacher training on student learning.

Chapter 11 discusses the changes in mathematics teacher candidates' teaching processes in terms of content of lesson plan, pedagogy aspects, and classroom management based on the evaluations of the content experts, peers, and their own.

Chapter 12 examines Mayer's Selection, Organization, and Integration components of learning alongside requirements and processes needed to reach the conclusion that learning has taken place. The review of literature looked at how the identified symptoms interfered with affected learners' classroom behavior, and subsequently with the ways in which they learn.

Chapter 13 shares experiences from a group of students who were using the chat rooms as part of instruction in their course work. It also This chapter underscores the importance of chat rooms as environments that supports virtual learning for distance learners and encourages learners' participation hence enhancing learner-centered learning.

Chapter 14 reviews best practices for authentic assessments in learner-centered classrooms. Authentic assessments can be used to evaluate knowledge as well as soft and hard skills. Rubrics are frequently created and used by the teacher to evaluate these assessments.

Chapter 15 examines challenges that learner-centered pedagogy face when identifying preconceived constructs and moving towards the adoption of new thoughts, perspectives, and reasoning. In theory, this study identified the continuing role that metaphors play in the learning theory and how the literature can be explored further. In practice, the study identified student-centered activities, which include the learner as a contributor to knowledge, learning in a community of learners, and empowering the learner to change.

Chapter 16 examines data on implementation of learner-centered approaches in technology-integrated classrooms. Findings indicate that the problems that some instructional technology researchers in the past decade have found still persist despite the extensive technology professional development designed to enhance the use of technology in a learner-centered approach.

Chapter 17 focuses on re-interpreting the findings of a recent study based on collaborative learning perspectives. The findings of the study suggest that social interactivity is pivotal to facilitating meaningful learning in formal online education. The findings further illustrate that the development of productive communities in continuing (in-service) education is a gradual process that evolves through four stages starting from community of interest to community of practice.

Chapter 18 examines theories of experiential learning as applied to undergraduate education in the context of personal and career development of students through a learner-centered online internship program model. This chapter also explores essential building blocks and best practices for faculty as teachers and mentors to implement in online internship program experiences to capitalize on traditional experiential learning practice.

Chapter 19 introduces educational robotics as a learning tool to foster learner-centered approach in classroom. The chapter explains how teachers can use educational technology with a learner-centered approach, using examples from 4<sup>th</sup> grade robotics unit as part of the science curriculum. It provides some tips for successful implementation of learner-centered learning using educational robotics learning tool.

Chapter 20 is a critical review of conventional and not so conventional Student Centered Learning (SCL) pedagogies. Specifically this chapter examines the following: Overview of SCL pedagogies; Conventional and not so Conventional SCL pedagogies; Implications for SCL pedagogies to learners, instructors, curriculum, and assessment. Finally, this chapter examines the misconceptions and advantages of adopting SCL in the light of learners and instructors.

In summary, many institutions of learning are continually pressed to find new and creative ways to enhance student learning...and learner-centered model is an approach that holds such promise. Ad-

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ditionally, there is a focus on active strategies to effectively serve the needs of the digital learners in modern technology-rich classrooms. To this end, the focus of this handbook explores the effectiveness of the learner-centered pedagogy as an alternative approach to innovative teaching and learning. This handbook can help educators make the connection between active learning pedagogy and professional development 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 learner-centered pedagogical framework. 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 and learner-centered teaching and learning. Our hope is that each of these scholarly manuscripts will help to expand the understanding of the issues, challenges, and opportunities for possible implementation of learner-centered pedagogies to enhance active student teaching and learning in the digital age.

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