Authentic Learning in African Post-Secondary Education and the Creative Economy

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Abstract

Authentic learning is a branch of constructivism, a pedagogical approach that places the student at the center of the learning experience. This instructional model has undergone gradual adoption in first-world countries, with underdeveloped countries still struggling to implement a systematic approach for incorporating authentic learning in the classrooms. In the meantime, the global economy has evolved from an industrial, factory-based economy to one involving the manipulation of knowledge. Consequently, the implementation of authentic learning has assumed an increased importance within education systems around the world, especially at the post-secondary level, where instructors need to prepare new graduates for a modern, service-oriented workforce. Authentic learning teaches the required soft skills that students can transfer from one situation to another: collaboration, communication, critical thinking, creativity, innovation, problem solving, and decision-making. In African countries, most teachers still use an instructivist, or teacher-centered approach to lesson planning and delivery, forcing students to learn through the memorization of isolated facts. This type of learning, which continues through all levels of education, leaves students unprepared for the twenty-first century workforce. Consequently, the following paper argues that African countries require a centralized and systematic approach for revising their education systems to promote authentic learning opportunities. The literature has enumerated the benefits to authentic learning, including enhanced motivation and learning outcomes for students as well as advantages for other stakeholders such as teachers. In addition to academic benefits, authentic learning also contains economic advantages by enhancing students' readiness for the working world and citizenship duties as well as benefitting employers, individual sectors, and overall economies. Although Africa faces many hardships, including a paucity of resources, a wholesale revision of their education systems will ultimately prove advantageous in the long term. This modification requires the coordinated efforts of all stakeholders, starting with governments.

Introduction

Authentic learning represents an emerging education approach that originated from a broad educational philosophy known as constructivism, where each student incorporates new knowledge into a previously existing knowledge base founded on an understanding of social context (Fry, Ketteridge, & Marshall, 2009; Orey, 2010). The main premise of authentic learning involves its ability to provide a "real world" context for learning. While this educational methodology can incorporate many different approaches, authentic learning ultimately seeks to provide realistic situations in which students can actively solve problems and connect their learning experience to prior information (Mims, 2003; Renzulli, Gentry, & Reis, 2004). This approach has been implemented into the school systems of many countries, especially first world

nations such as Canada, the United States, and European countries. However, underdeveloped nations, such as those in Africa, still experience struggles to evolve beyond traditional learning methods and adapt authentic approaches despite the worldwide emergence of the creative economy. Consequently, the current economies of these countries face challenges pertaining to the qualification level of post-secondary graduates. The expectations of employers, who seek students with relevant field experience, fail to correspond to the theoretical-based education that students receive in African post-secondary institutions. As a result, many new graduates face unemployment and lack the practical skills with which to start their own business. This issue not only impacts the students and employers but also affects the overall economy in these countries. Accordingly, this paper will argue for the necessity of wholesale effort from all stakeholders in African countries towards adopting authentic learning approaches in post-secondary education. Although the incorporation of authentic learning in African countries poses many challenges, the benefits of this educational methodology provide impetus for overcoming such barriers. Specifically, authentic learning contains advantages related to both education and the economy. The educational benefits of authentic learning involve motivated students, motivated teachers and other stakeholders as well as improved learning outcomes. Furthermore, authentic learning enhances student preparation for the workforce, which not only benefits new graduates but also employers and the overall economy in African nations. Despite the challenges associated with authentic learning, African nations can find ways to overcome these barriers and adopt authentic learning into their post-secondary programs and classrooms.

Authentic Learning

Authentic learning comprises a branch of constructivism that emanates from the educational philosophy of John Dewey. According to Orey (2010), constructivism provides a social context for learning that allows students to construct their own knowledge from the real world. As one of the pioneers for student-centered learning, Dewey rejected the traditional, teacher-centered methods of education and advocated for practical learning based on real-life contexts. Specifically, Dewey proposed an interrelationship between education and democracy, which conceives students as independent beings with the freedom to explore their own inquiries (Kucey & Parsons, 2012). One of the main tenets of this methodology necessitates integration between theoretical knowledge and practical experience (Westbrook, 1993). In opposition to the notion of the student as a blank slate for teachers to fill with knowledge, Dewey envisioned each student as a vessel containing a unique set of prior information and experiences. Consequently, he believed that teachers should build upon the students' existing knowledge base by guiding rather than dictating their learning experiences. One of the ways in which Dewey suggested instructing students entailed the use of problem solving as a way of generating student inquiry and ultimately learning (Radu 2011; Westbrook, 1993). This insight led to the use of problem solving and questioning as one of the pedagogical methods that comprise constructivism, a branch of student-centered learning.

Within the ideology of constructivism, each student comprises an individual learner that constructs his/her own knowledge by building on prior knowledge. Although constructivism has resulted in the evolution of many different educational approaches, this paper will focus mainly on authentic learning as a subset of constructivism. Authentic learning involves the provision of "real world" contexts in which student learning can take place. Educators that utilize this pedagogical methodology provide realistic problems or situations that contain both personal relevance and a real-life setting (Renzulli et al., 2004). Students that engage in active learning

can explore these situations in order to construct personal meaning through the connection between prior knowledge and new information. Authentic learning involves several different teaching and learning methods, including multi-level instruction, scaffolding, the use of heterogeneous groups, and the incorporation of student interests. In particular, the techniques of multi-level instruction and scaffolding allow students to progress seamlessly from one level of knowledge and capability to the next level (Peterson, 2002). Teachers can incorporate authentic learning by providing ongoing activities or projects that include several essential characteristics: a series of multistep tasks, open-ended questioning, problem solving, the examination of issues from several different viewpoints, collaborative or cooperative learning, reflective practice, the integration of skills and knowledge from various curricular areas, and the accommodation of multiple solutions or answers. At the post-secondary level, these activities, depending on the subject of instruction, can incorporate problem-based learning, project learning, experiential learning, games, simulations, role-playing, debates, realistic data sets, reflection, internships or field placements, and group projects (Bell, 2010; Royal Roads University, 2014). In addition, authentic learning also involves unique assessment techniques, which include both formative and summative assessment. While summative assessment tests students' knowledge at the end of a particular course unit, formative assessment involves an ongoing evaluation of student learning. Research has shown that formative assessment used in authentic learning provides both students and teachers with benefits; while this method enables teachers to adjust their teaching approaches, students have experienced improved learning outcomes (Stull, Varnum, Ducette, Schiller & Bernacki, 2011). In authentic learning, teachers can assess students at all stages of the activity, thus comprising formative assessment (Oblinger, 2007).

Although authentic learning can occur successfully at all levels of education, the scope of this paper focuses solely on the incorporation of authentic learning at the post-secondary level, including universities, colleges, and technical institutes, as this level of learning bears the most relevance to the workforce and economy. The global labor market has steadily evolved towards increasingly specialized forms of labor (Dobbin, 2009). The transition from an industrial to a knowledge or service economy requires different educational models. During the industrial revolution, the educational system underwent transformation to reflect the structured, scheduled, and regimented atmosphere of the factory (Sawyer, 2008). However, this structure fails to align with today's evolving knowledge economy. While this shift has already occurred in developed countries, the economies in African nations have begun to adopt a service-oriented workforce that requires unique skills, including communication, collaboration, research, synthesis, and analysis (Barron & Darling-Hammond, 2008). In fact, one of the definitions of authentic learning involves its ability to "mimic the work of professionals in the discipline" (Rule, 2006, p. 2). Today's labor markets mainly attract graduates from post-secondary institutions, thus attesting to the critical role that universities and colleges fulfill in replenishing the workforce and stimulating the economy and its individual sectors (Sattler, 2011). In all countries, employers require graduating students to learn practical skills that they can transfer immediately to their new profession (Oblinger, 2007). Despite this requirement, many post-secondary programs and courses still use teacher-centered methods of instruction, which primarily involve lecturing and rote learning (Parker, Maor, & Herrington, 2013). Herrington and Herrington (2006) maintain that higher learning instructors implement instructivist, or teacher-centered, approaches in order to adhere to the tradition of formal university teaching and cater to large classes in lecture halls while upholding the elitist image associated with university education (European Commission, 2004). However, this style of teaching results in graduates that lack adequate preparation for the

workforce, as they fail to understand the way in which the theoretical knowledge and skills that they acquired in university translate into professional practice (Herrington & Herrington, 2006; Jones, Casper, Dermoudy, Osborn & Yates, 2010).

Despite the traditional approach to university lecturing, many post-secondary institutions and programs, especially in developed countries, have increasingly incorporated a practical component, which may include a work placement, practicum, internship, apprenticeship, or cooperative education experience (Oblinger, 2007). For instance, Resnick (1987) suggested the idea of bridging apprenticeships, which connect theoretical learning in the classroom to the application of practical knowledge in the workplace. Herrington, Reeves, Oliver, and Woo (2004) suggest that realistic experiences occur not as isolated tasks but as entire courses, either in traditional face-to-face classroom settings or virtual online classrooms. However, individual institutions, programs, or classes may entirely omit practical segments. Moreover, even in the case that such experiential aspects accompany the theoretical components, the links between theory and practice may remain ambiguous due to the program requirements or the instructional methods. Finally, many students may view practical components such as apprenticeships and practicums as tedious and repressive, causing them to harbor a dislike for the course and their intended profession (Herrington et al., 2004). These cases occur more frequently during a disconnection between the theory and practice. As a result, all stakeholders involved in post-secondary education, including governments, curriculum or program designers, teachers, and field supervisors, need to collaborate to implement policies that provide a wholesale shift from teacher-centered to student-centered learning.

Post-Secondary Education in Africa

In contrast to developed and developing countries, who have transitioned or at least begun to transition towards student-centered education, African nations still lag behind in their ability to adopt student-centered methods such as authentic learning in the classrooms. The education systems in most African countries still implement the traditional teacher-centered pedagogy, where instructors select the material and deliver instruction through methods such as direct lecturing, memorization, rote learning, factual information, and summative assessments with paper-and-pencil tests (Vavrus, Thomas, & Bartlett, 2011). This educational methodology operates under the assumption that all students have similar or equal strengths, interests, learning styles, and abilities. Originally inherited from the colonial period, where colonizers and missionaries indoctrinated African students with European culture, language, and religion, the teacher-centered method facilitated teachers' abilities to force instruction on students (Vavrus et al., 2011). Although Africa has experienced many social, cultural, economic, and political changes since the inception of these early education systems, the teacher-centered methods still persist in most of these countries. As a result of their outmoded pedagogical methods, African nations produce some of the lowest educational measures and achievements on a global basis. Specifically, most aspects of African education systems still remain far behind those of developed and even developing countries, including early childhood, primary, secondary, and tertiary education as well as educational equality in categories such as gender, socioeconomic status, and regional location (EFA, 2014).

Although recent years have witnessed some attempts to improve the education systems in African nations, the bulk of these initiatives and resources have focused on primary and secondary education rather than higher learning. For instance, the Education for All (EFA) global movement has substantially increased enrollment in primary schools, with approximately

90% of children attending primary school; however, these numbers drop to 35% in secondary school and 5% in tertiary education (Bloom, Canning, & Chan, 2006; Vavrus et al., 2011). Not only do these figures still remain significantly behind the numbers in more developed countries but also deceptively skew the reality of African education in a positive direction. Specifically, nearly 30 million students in African countries fail to achieve the minimum required education levels due to low educational attainment, repetition of one or more grades, and the decision to discontinue their education (United Nations, 2011; Watkins, 2013; World Bank, 2011). In both cases, these figures demonstrate that African students graduating from the education system lack the ability to participate effectively in the workforce. According to a special report by the United Nations (2013), more than 400 million young people will enter the labor market in the next twenty years. This forecasted prediction, along with the inadequacies in African education systems, points to the necessity for immediate changes in better preparing students for the workforce.

African post-secondary institutions have among the lowest enrollment rates per capita in the world (Bloom et al., 2006). While enrollment rates have doubled between 2000 and 2010, the paucity of funding directed towards higher learning has led to a decrease in the number of resources available for each post-secondary student (British Council, 2014). The paucity of financial and material resources at African universities have resulted in high student-to-teacher ratios; overcrowded lecture halls; poor instructor quality; outdated communication and information technology; reduced laboratory and library facilities; and insufficient learning environments that result from infrastructural deficits (Bunoti, 2010; Jaffer, Ng'ambi, & Czerniewicz, 2007; United Nations University, 2008; Zwiers, 2007). In particular, Bunoti (2010) found that Ugandan students experienced low quality lectures, unprofessional teacher behavior, poor instructor preparation, and the sole use of lecturing and handouts to disseminate information. These conditions, in addition to curricular deficiencies and uneducated instructors, further complicate students' ability to acquire the necessary information. For instance, many postgraduate programs extend the subject areas taught at the undergraduate level rather than offering specialized training that prepares students for their chosen professions (Teferra & Grejin, 2010). Corporations and employers have even stated that graduating students lack the basic skills necessary in the workforce (Materu, 2007; United Nations, 2011). As a result, companies and industries experience a deficit of skilled workers, leading to limited productivity and profit (British Council, 2014). While the personal effects of poor academic preparation include limited access to job or business opportunities and intergenerational poverty, the economic consequences include low purchasing power, an unskilled workforce, and an increased crime rate (United Nations, 2011). In addition, the poor reputation of post-secondary institutions in Africa lead students to pursue higher education in other regions or even nations, depriving local economies of skilled workers, a phenomenon known as the "brain drain" (British Council, 2014).

Many challenges present in African post-secondary institutions can be overcome by implementing authentic learning approaches. Several authors cite the ineffectiveness of the current teacher-centered mode of instruction that persists in African universities (Barron & Darling-Hammond, 2008; Oblinger, 2007). For example, a study by Zwiers (2007) demonstrated that fact-based teaching failed the enable students to remember factual information after their education, especially since this type of instruction lacks relevance in the real world. The tradeoff between the desire to provide equal and universal access to education and the need for a higher quality of education can be overcome by incorporating authentic learning approaches (DFID,

2012). Consequently, the remainder of this paper will analyze of the benefits to authentic learning in African universities.

Current Authentic Learning Initiatives in SSA Post-Secondary Education

As compared to other nations, African countries have been slow to implement authentic learning in their classrooms. In the past decade, the educational policies in several African nations have begun to mandate the use of interactive learning approaches in the classroom at all levels of education (Vavrus et al., 2011). Despite these mandates, the efforts to incorporate authentic learning at the post-secondary level have lagged behind those in other nations; many of these initiatives have proven fragmented and ineffective. In one study, Jaffer et al. (2007) proposed the use of spreadsheets as a means of enhancing mathematical literacy. Another investigation involved the use of interactive radio as a means of delivering authentic learning experiences to disadvantaged students (EFA, 2014) In addition, Traxler and Dearden (2005) attempted to demonstrate the effects of delivering authentic learning via mobile technology in African post-secondary education. Although the results of this study remain inconclusive, they still raise the possibility of inexpensively increasing the quality of and access to education for higher learning in Africa.

A report by the United Nations (2011) suggested that African nations could learn from the experiences of developed and developing countries regarding the implementation of authentic learning. Additionally, some researchers have recommended that teachers and educators in African schools and institutions use open educational resources (European Commission, 2014; Hogan, Carlson, & Kirk, 2015). Hogan et al. (2015) describe open educational resources as those that can be shared or copied free of charge; in addition, teachers or instructors can revise the resources to deliver their own customized material. These resources represent ideal learning materials in African countries not only because of their easy access and inexpensive cost but also because they encourage authentic learning practices by enabling students and teachers to collaborate, engage in critical thinking, and innovate (Hogan et al., 2015). Another inexpensive means of learning involves project-based learning, where students initiate their own learning through inquiry and work collaboratively with others. This method of learning represents an inexpensive means of obtaining prowess with technology as well as gaining problem solving and communication skills (Bell, 2010). Despite these few initiatives, African nations still require a more systematic approach to incorporating authentic learning in post-secondary classrooms.

The Creative Economy

Many researchers refer to today's knowledge-based or service economy as the "creative economy," which emphasizes creativity, innovation, and new ideas (Sawyer, 2008). As part of the creative economy, knowledge has undergone a conceptual transformation. Rather than a static idea, knowledge represents a process that occurs between an individual and their surrounding environment (Sawyer, 2008). As a result, graduates and employees need to acquire more than the memorization of facts; they require the ability to manipulate complex concepts by way of critical thinking and innovation. Education systems require wholesale revision to address these needs and prepare graduates for the "real world" and their prospective careers (Sawyer, 2008). While previous schooling models trained students with the hard skills required for specific vocations, today's fluid economy requires students to learn "soft" skills that can apply to all professions.

In addition to its new way of envisioning knowledge, the creative economy also places an enhanced emphasis on culture. The United Nations and its affiliated organizations have been working to ensure that culture assumes an increased role in the economy worldwide (United Nations, 2013). The growing importance of culture has stimulated the creative economy. Within this vision, the cultural industries of all countries have been recognized for their role in driving the economy and producing new ideas through innovative technologies. Specifically, the creative economy aims to create new businesses and jobs, generate income for people and industries, and develop exports (United Nations, 2013). Due to its global focus, the creative economy aims to create collaborative relationships among industries and even nations, deriving new connections between different industrial sectors and countries in order to enhance revenue generation (United Nations, 2013). In addition to its financial benefits, the creative economy also provides non-monetary advantages, such as the development of social and cultural aspects as well as environmental and heritage preservation. These benefits increase individual quality of life and overall wellbeing through important relationships and increased cultural engagement (United Nations, 2013).

In Africa, the creative economy has undergone recent development. Africa contributes less than one percent to global creative exports due to their limited resources (United Nations, 2013), thus showing that the culture industry in African countries remains largely untapped. Similar to the case with the education sectors, the cultural sectors in Africa face many challenges, including resource limitations, lack of trained or qualified personnel, infrastructural issues that limit distribution networks, and decentralized governments that complicate unified policymaking. In particular, many policy makers resist linking culture to other industries, as they perceive culture as a luxury rather than an economic necessity (United Nations, 2013). One emerging trend in many African nations involves the development of small, independent businesses (United Nations, 2013). However, similar to the case with companies, many African graduates seeking to create start-ups lack the necessary skills to succeed in businesses due to the lack of authentic learning opportunities within the education systems. The creation of start-ups requires many of the skills honed in authentic learning, including creativity, innovation, problem solving, decision making, and collaboration. Kampylis and Berki (2014) refer to these abilities as "creative thinking," which "enables students to apply their imagination to generating ideas, questions, and hypotheses, experimenting with alternatives, and evaluating their own and their peers' ideas, final products, and processes" (p. 6). According to these authors, creative thinking can be utilized in all levels and subject areas of education. Subsequent sections of this paper will discuss the relationship between authentic learning and the creative economy, focusing explicitly on the way in which authentic learning adequately prepares students for living and working in the creative economy within their own culture as well as on an international and multicultural level.

Benefits to Authentic Learning

The next section of this paper will focus on the benefits of authentic learning. These advantages are classified into two groups: academic benefits and workforce benefits.

Academic Benefits

The academic benefits of authentic learning include increased student motivation, enhanced teacher motivation, improved educational outcomes, and advantages to other stakeholders.

Motivates Students

The literature on authentic learning unanimously demonstrates that this pedagogical method increases the motivation of students to learn. Helm (2008) maintains that authentic learning activities engage students of all levels by providing rich, integrated learning experiences. Students that are directly involved in their learning feel excited and curious about their tasks, causing them to delve deeply into their activity (Helm, 2008). Specifically, many of the Canadian education systems have recently proposed changes geared towards the implementation of authentic learning and technology in their individual provinces. For example, the Ontario Public School Boards' Association (2013) has stated that the use of technology in authentic learning increases student motivation by allowing them to pursue individual interests through the multiplicity of available information and resources (OPSBA, 2013). One recent European initiative includes the use of creative classrooms, which constitute innovative learning environments that create realistic opportunities for developing modern labor market skills, such as problem-solving, collaboration, and communication. These classroom environments provide learners with the ability to control their own learning through flexible activities that meet their own needs and interests as well as providing leadership opportunities. In this context, teachers serve as guides or mentors that facilitate rather than dictate student learning (Bocconi, Kampylis, & Punie, 2012).

In addition to North American examples, research studies from around the world demonstrate similar results about authentic learning, especially in the context of higher learning. In Australia, Faulkner and Faulkner (2012) discuss the motivational effect of several authentic learning opportunities in software engineering programs, which include industry case studies, software tools, and media articles. In Malaysia, Nikitina (2011) provided an example of authentic learning, where instructors of foreign languages use theatrical activities, such as the production of drama, videos, or movies in the target language. Not only does this type of activity resemble a real-life context but it also facilitates student enjoyment (Nikitina, 2011). African post-secondary institutions have also shown that authentic learning increases students' desire to learn. Kandiero and Jagero (2014) investigated the effectiveness of Emerging Technologies, a specific authentic learning application, to teach an undergraduate university course in business mathematics at Africa University in Zimbabwe. The authors reported that this application increased the motivation of students to attend class and engage in the material (Kandiero & Jagero, 2014). Despite the positive findings concerning the way in which authentic learning experiences motivate students, Herrington et al. (2004) report that in some cases, teachers that design authentic courses and activities may fail to fully engage some students because the concept of authenticity represents a subjective concept based on the teacher's personal perception. The results of this study imply the need for at least some level of student participation in designing or suggesting such activities. McKenzie, Morgan, Cochrane, Watson, and Roberts (2002) seek to expand the cluster of principles defining authentic learning to enable their students to distinguish genuine authentic learning experiences that speak to their experience in the world. Consequently, much of the literature concurs that student participation comprises a necessary component of authentic learning in order to motivate learners.

Motivates Teachers

Not only does authentic learning enhance students' desire to learn, but it also increases the motivation and hence the performance of teachers. In their literature review, Westbrook et al. (2013) found that teachers who implemented interactive learning in their classrooms reported

more positive attitudes towards their practice and their students. These authentic learning practices from teachers included continual feedback, linkages between classroom material student experiences, the establishment of a safe environment, collaborative group activities, the use of authentic materials, student questioning, practical demonstrations, and varying lesson formats. An improvement in teachers' mindsets subsequently influenced students, who experienced improved learning outcomes (Westbrook et al., 2013). Herrington et al. (2004) investigated the impact of authentic learning activities through web-based courses at the university level. Specifically, these authors found that teachers who design units or courses featuring ongoing authentic learning activities report more enthusiastic and positive attitudes towards their teaching and about the quality of student learning. Specifically, these instructors state that such authentic courses and activities enhance their practice by increasing their pedagogical knowledge and personal experience. These results apply to both traditional classroom courses and web-based courses (Herrington et al., 2004). In addition, other studies attest to the way in which authentic learning approaches and tools improve the performance of teachers. Conejar and Kim (2014) found that the use of mobile technologies to deliver authentic learning supports teachers' practice and improves their ability to effectively teach their lessons. Banas and York (2014) found that the use of authentic learning exercises in pre-service teacher education improved teachers' self-efficacy with technology, which subsequently increased their likelihood to integrate technology in their own practice. These findings demonstrate that teachers require familiarity and understanding with technology prior to implementing these devices as part of authentic learning instructional strategies. One shortcoming to the use of authentic learning involves the additional time requirements for planning lessons, as many teachers report that they feel taxed with the preparation requirements (Herrington et al., 2004). This shortcoming may be overcome with additional teacher education on how to effectively incorporate authentic learning in the classroom and actual practice under reasonable time constraints. In sum, the literature demonstrates that authentic learning increases teacher motivation, which in turn, also enhances the enjoyment and academic results of students.

Improved Student Outcomes
The final academic benefit of authentic learning involves the ability of this method to improve learning outcomes. According to Helm (2008), authentic learning experiences cause students to increase their engagement with the material, which ultimately influences them to take ownership of their own learning. Specifically, students use critical thinking to develop their own learning strategies and willingly collaborate with other students, two skills strongly associated with authentic learning. When students are motivated to learn material, the amygdala, the part of the brain responsible for emotions and motivation, becomes stimulated, signaling the importance of retaining interesting information (Helm, 2008). Because authentic learning experiences increase students' ability to retain information, these activities and the pedagogical approach that influences such tasks ultimately improves students' academic performance. In addition to the connection between engagement or motivation and learning outcomes, the use of authentic experiences increases the ease of learning through the notion of scaffolding, which involves the connection between new learning material and previous knowledge or experience (Helm, 2008; Orey, 2010). During the process of scaffolding, teachers serve as facilitators that bridge students' previous learning to new information (Orey, 2010).

While studies have shown that traditional teacher-centered methods lead to poor learning outcomes (Otaala, Maani, & Bakaira, 2013), recent research has attested to the effectiveness of

the implementation of authentic learning. One conventional method of authentic learning involves the use of outdoor education, which incorporates a diverse range of learning experiences that may include outdoor learning activities, tasks conducted outside of the classroom, and learning about landscapes and the environment (Higgins & Nicol, 2002). Szczepanski (2006) investigated the effect of outdoor education on students, reporting that this method of authentic learning not only increases student motivation but also increases educational attainment. Specifically, outdoor learning experiences teach students about the relationship between theory and physical place, thus grounding their education in a real-world context (Higgins & Nicol, 2002). Another type of authentic learning, project-based learning, demonstrates that students engaged in this form of learning outscore students taught by traditional, teacher-centered methods (Bell, 2010)

Despite the efficiency of outdoor learning, authentic learning is delivered most effectively through modern technology. In today's modern society, university courses have begun to incorporate distance or remote education through web-based platforms and resources. Herrington et al. (2004) discusses the implementation of authentic learning through web-based classrooms, showing its effectiveness outside of the traditional classroom. Through establishing a teacher training program in Ethiopia, Zwiers (2007) found that active learning methods such as critical reflection and material that addressed real-world subjects resulted in improved student learning. Furthermore, Campbell (2013) enabled students in a first-year mathematics class to access a database that featured multi-language video explanations of the math concepts. The findings demonstrated that the students with access to the database improved their test scores in comparison to the students that lacked access to the database. Despite the positive effects of using digital technology in the classroom environment, students need to learn digital citizenship in order to obtain skills that appropriately use technology. This includes the development of pro-social skills, education about issues of intellectual property, an understanding of ergonomics, and the avoidance of cyber bullying (OPSBA, 2013). Therefore, the use of modern technology enhances the extent to which authentic learning improves student outcomes.

Other Stakeholders

Authentic learning contains benefits to other stakeholders, including education administrators and the government. Kampylis and Berki (2014) assert that the main purpose of education should involve preparing students adequately for the future, which includes their contribution to the workforce as well as citizenship responsibilities. With this central purpose in mind, a student's education ultimately affects many stakeholders outside of the education system. Administrators that invest in teacher training programs emphasizing authentic learning reap the benefits of having teachers learn more efficiently and transmitting their knowledge to students through effective learning opportunities (Newmann, King, & Carmichael, 2007). In addition, the national and/or provincial governments that drive policy-making will gain economic advantages by mandating curricular changes that target authentic learning opportunities in the post-secondary classroom. Since the students that engage in authentic learning will possess the necessary skills to succeed in the workforce, the government and education ministers will reap the benefits from academic success as well as a healthy economy.

Enhanced Preparation for Workforce

In addition to its academic benefits, authentic learning also provides advantages to all stakeholders in the workforce: students, employers, and the economy.

Students

        Authentic learning contains several benefits for the graduates of post-secondary education. In particular, the authentic learning environment provides students with practical experience that they can apply in the workforce or towards starting their own businesses. McKenzie et al. (2002) perceive authentic learning at the post-secondary level as "a measure of a curriculum's relevance or appropriateness to the world that graduating students will enter" (p. 426). These authors believe that authentic learning not only prepares students for their prospective careers but also readies them for a wide variety of professional and entrepreneurial endeavors. Specifically, authentic learning opportunities at all educational levels enable students to achieve independence and gain important collaboration skills (OPSBA, 2013). Although education systems should ideally begin authentic learning at early grades, the most crucial level to introduce this type of learning occurs at the post-secondary stage. Instructors that use student-centered learning approaches can enhance the preparation of learners for the workforce by incorporating educational experienced that increase their employability skills, such as creativity, critical thinking, reflection, and problem-solving (Bunoti, 2010). Creativity and innovation enable students to generate new ideas and refine these ideas into an acceptable format that includes real-world limitations. These skillsets represent essential abilities in a rapidly changing world, thus benefitting students that learn creativity and innovation. Similarly, critical thinking enables students to analyze and understand complex systems representative of today's economy (OPSBA, 2013). Collaboration within a community of learners, either in a physical or virtual classroom, provides students with the real-world experience of working in teams at their future job setting and dealing with people (Rule, 2006). Finally, due to the phenomenon of globalization, communication and collaboration have gained increasing importance in the modern world, especially with increasing cultural diversity (OPSBA, 2013). Much research has demonstrated the advantages of enabling students to acquire creativity through authentic learning. For instance, Safuan and Soh (2013) investigated the implementation of authentic learning in a Turkish classroom, where the use of Facebook enabled students to develop job-related skills, including analytical thinking, problem solving, and collaboration. Similarly, Neo, Neo, and Tan (2012) reported that the use of technology enhanced student-centered learning and provided students with employable abilities such as creativity and problem solving. In conjunction, these studies show how authentic learning initiatives provide students with real-world skills that will enhance their employability and productivity within the workforce.

        Another important area that connects learning to the real world involves the use of technology. Students live in a world where they can access information and communicate with others instantaneously through the use of handheld digital devices. By implementing these devices into the classroom or creating "virtual" classrooms through which students can access material and maintain contact with teachers and peers, educators can enable students to experience a realistic learning environment that not only engages their attention but also bridges the gap between classroom theory and realistic learning experiences (OPSBA, 2013). Miron, O'Sullivan, and McLoughlin (2000) found that online learning environments for post-secondary students provide realistic settings for students to experience aspects of their desired career while gaining work-related skills. Furthermore, some authors attest to the existence of a relationship between student motivation and employable skills. For example, Hui and Koplin (2011) studied the use of authentic learning in a finance class, where students selected a country to investigate and conducted independent research on this nation. The study results found that students not only experienced engagement in the material but they also acquired the ability to comprehend and

solve realistic problems (Hui & Koplin, 2012). Therefore, the use of authentic learning within the post-secondary classroom environment increases the employability of students by providing them with realistic and transferrable skills.

Employers

Due to the shifting labor market around the world, employers increasingly require students with specialized and creative skills (Dobbin, 2009; United Nations, 2013). The economies, business sectors, and individual employers in African nations have begun to catch up with the rest of the world in terms of their labor requirements in a service-oriented workforce, which include students with transferrable skills such as creativity, collaboration, reflection, and problem-solving (Barron & Darling-Hammond, 2008). Throughout the world, universities and colleges have the important role of supplying the market with competent graduates that can apply their skills to their new career (Sattler, 2011). Students that graduate from post-secondary institutions with authentic learning environments provide employers with qualified candidates, thus enhancing the strength of their corporations and/or industries. In the modern labor market, employers require that employees possess several employable and transferable skills, which include creativity, problem-solving, flexibility, collaboration, and communication skills (Materu, 2007). Due to the emergence of the creative and knowledge-based labor markets, African economies have undergone recent expansion, requiring increasing numbers of graduates to fulfill labor requirements. In most sectors, skill gaps remain present in these industries, with fewer graduates qualified for employment (Rwanda Development Board, 2012). In order to fill these skill gaps and provide higher numbers of qualified candidates for all sectors, tertiary learning institutions need to employ authentic learning experiences in their programs.

Research has explored the ways in which authentic learning allows students to acquire skills that employers seek. Rule (2006) maintains that authentic learning opportunities that prepare students for the workforce should ultimately impact people outside of the classroom, which can include stakeholders such as employers. In these tasks, students should access resources beyond the immediate learning environment and study real-world problems with relevance to various corporations and industries (Rule, 2006). The results of these activities not only benefit employers by preparing future employees with authentic knowledge and skills but also provide immediate assistance from students' efforts. In particular, work placements such as internships, practicums, and apprenticeships allow students to positively impact an organization with their activities by adding work value and contributing to an organization's mission or culture. In addition, these practical components also benefit workplaces in the same industry or entire industries by providing capable graduates. Some studies have investigated specific ways in which teachers and instructors can implement job-based authentic learning in their classroom. For instance, Herrington and Herrington (2006) suggest the idea of web-based learning to mimic the setting of students' prospective work environment by allowing them to solve complex problems. This strategy will increase student preparation in transitioning from the classroom to the workforce, not only benefitting the students but also the employers.

Economy

Finally, the implementation of authentic learning provides substantial benefits to the economy and its various industries. Materu (2007) states that some of the benefits to improving higher education in Africa include technological advancement, improved health, and enhanced quality of life. Some research studies provide concrete evidence that authentic learning achieves

these benefits. In fact, a study by Szczepanksi (2006) suggested that outdoor education enhances the health and wellbeing of students. Assuming that the students maintain their level of health into adulthood, the overall wellbeing of people enhances the productivity of workers by minimizing employee absenteeism and turnover as well as increasing performance. From this perspective, a healthier workforce raises not only the performance of individual sectors but also the state of the overall economy. Among all industries in African nations, the healthcare industry will reap substantial benefits, as SSA countries account for 24% of diseases worldwide yet constitute only 4% of the global workforce (Bingagwaho et al., 2013). Furthermore, the use of technology to deliver authentic learning experiences helps countries to keep up with the pace of technological advancement, which subsequently enhances the economy of various sectors and the overall performance of a nation's economy (OPSBA, 2013). For example, Atkinson (2011) mentions several technological tools that can assist in the implementation of authentic learning: digital stimulation, collaborative wikis, graphing calculators, virtual technology, social media, blogging, discussion forums, and mobile devices. These media and devices not only contribute to the delivery of authentic learning experiences but also educate students in their use, thus enabling these students to contribute their technological knowledge to employers and industries.

Authentic learning initiatives provide direct and indirect benefits to the creative economy. Since authentic learning purports to build certain skills, including creativity and innovation, these skills directly address the abilities sought in the creative economy, which encourages new developments in all fields and industrial sectors. These new innovations ultimately broaden the economy and promote increased specialization in a variety of fields (United Nations, 2013). Because the specialized, service-based economy already requires critical thinking and problem solving skills best addressed by authentic learning opportunities (Dobbin, 2009), the forecasted trend towards greater innovation and specialization to meet rapid change makes authentic learning even more critical within the emerging creative economy. In addition, authentic learning tasks that target cultural and linguistic aspects not only teach students about foreign languages in realistic ways but also enhance their sense of international diversity and multiculturalism necessary in today's global economy (Alidou et al., 2006; Nikitina, 2011). The development of culture and language provides students with the necessary tools for participating in the creative economy not only in their own nations but also internationally. Furthermore, the objectives of authentic learning align with those of creative economy initiatives. As previously mentioned, authentic learning, as well as the general methodology of constructivism, purports to empower individual learners by focusing on their strengths, weaknesses, needs, and interests (Radu 2011; Westbrook, 1993). Similarly, the creative economy aims to empower citizens by focusing on their culture; specifically, "it empowers people with capacities to take ownership of their own development process" (United Nations, 2013, p. 9). By encouraging multiple perspectives and embracing collaboration, the creative economy reflects the goals of authentic learning. Therefore, authentic learning represents the ideal educational approach for sustaining the creative economy.

In addition to the economy, authentic learning can also enable students to manage their general affairs in life as well as maintaining a reasonable level of civic participation. Authentic learning can teach adults to function effectively in society through various mandatory tasks: balancing a budget, making an informed decision on a political candidate, choosing a major purchase such as a home or car, planning for a family, negotiating with salespeople, and persuading an organization to change its policies (Newmann et al., 2007). The successful execution of such duties requires the skills developed through authentic learning opportunities,

such as critical thinking, decision-making, collaboration, communication, and innovation. For example, the authentic learning skill of collaboration, executed through involvement in cooperative learning with a community of learners, prepares students for dealing with people in various facets of life (Rule, 2006). As a result, students should receive similar tasks in the academic learning environment in order to not only mirror these real-world activities but also to hone the crucial skills required to perform their civic duties and function in society (Newmann et al., 2007). Some of these tasks can include the use of bus schedules, maps, diaries, and interviews as a way of developing critical literacy (Rule, 2006). Although the aspect of day-to-day activities seems to have little relationship to the economy, these daily activities ultimately impact the economy through financial elements such as purchasing, budgeting, and bill paying. From this perspective, authentic learning in education ultimately impacts the economy not only directly, as discussed in the preceding section, but also indirectly, through a person's ability to perform basic life activities.

Proposed Changes for Enhancing Authentic Learning

The final part of this paper will discuss the barriers and proposed changes that will enable African nations to implement authentic learning at the post-secondary level. Due to the limited scope of this paper, an extensive discussion of the challenges and barriers is presented in a larger project detailing the use of authentic and personalized learning in SSA. Although the following sections reflect the use of subdivisions between the various areas of potential improvement, such regimented sections may belie the interconnections that exist between them.

Funding

Most African nations and their various industries face challenges in terms of their human and financial capital. Many national and international organizations have significantly increased their funding for education in African countries (Watkins, 2013). However, a report by the EFA (2014) indicates that the world's richest nations possess the resources to contribute even greater amounts to this cause. The same report also maintains that the establishment of specific target objectives, such as 6-7% from national governments and 20% from international donors, will ensure that the money devoted towards African education receives proper utilization (EFA, 2014). Some of the potentially new uses for funding include the establishment of quality assurance programs to oversee education and greater teacher training (Materu, 2007) as well as the development of local research initiatives that encourage the acquisition of local knowledge and innovation (Teferra & Greijn, 2010). Specifically, the development of new knowledge may bolster the creative economy by providing businesses and graduates with unique and culturally-relevant innovations (United Nations, 2013). In addition, new potential donors, such as national governments and local business, can emerge as major contributors to this effort (Watkins, 2013). The contributions from businesses and corporations will enhance the link between education and the workforce, thus providing a greater sense of stakeholder accountability from businesses seeking new graduates. Although these sources propose several ways of raising money, such as additional donations, increased taxation, and reallocation of taxpayer funds as well as the suggested uses for such funds, such literature fails to specify the ways to ensure the planned utilization of such funds. Future research can examine effective policy implementation methods to ensure the appropriate usage of educational resources in SSA education.

While international donors have focused their funding mainly on basic education, such as literacy and numeracy in the primary grades, tertiary education has received the least amount of

attention in these countries. In addition, some of the funding devoted towards international education has been allocated to post-secondary education in developing countries such as China, largely neglecting the needs of underdeveloped nations (EFA, 2014). Bloom et al. (2006) state that African nations, especially Sub Saharan Africa, have the lowest enrollment rates in the world. While the enrollment rates in African post-secondary institutions have doubled in the past decade, the higher number of students has resulted in a low quality of education in these institutions (British Council, 2014), thus necessitating the input of more money to improve the quality of education. The acquisition of additional funding for higher education will enable African universities to adequately address increasing enrollment rates and provide a higher quality of education to growing numbers of students. Future speculations show that additional investments in higher education will lead to a GDP growth rate of at least 0.24%, which more than recovers the costs of the initial investment (Bloom et al., 2006). Ssentamu (2013) suggests some funding initiatives that may increase the financial support towards higher education in Africa. Specifically, he suggests the addition of publicly funded post-secondary institutions, the implementation of a student loan scheme, the creation of partnerships that enhance the potential for networking between sponsoring agencies and universities, and the involvement of private sector corporations in higher education (Ssentamu, 2013). As previously indicated, the role of corporations in funding post-secondary education will enhance the connection between education and business while potentially influencing other important changes, such as curricular revisions that directly address modern workforce needs. Additional funding initiatives will enhance authentic learning opportunities by not only raising the quality of education but also providing additional resources and technology to facilitate such a wholesale change.

Resources and Technology

One of the main barriers for implementing authentic learning in African countries involves the paucity of material and technological resources. Since most authentic learning initiatives involve the use of modern technology (Herrington, 2009; Herrington & Herrington, 2007; Lombardi, 2007; Oblinger, 2007; Parker et al., 2013), SSA nations, which lack the technological capital of wealthier nations, are at a significant disadvantage for implementing authentic learning. However, some studies have indicated ways in which teachers can implement authentic learning despite limited resources. In his study, Zwiers (2007) found that instructors have the potential to implement active learning methods without utilizing elaborate resources or modern technology. Some of these approaches include reflection, problem solving, creativity, open-ended questioning, and critical thinking. In addition, authentic learning can occur during outdoor-based education or field trips. Other researchers propose ways of utilizing available resources to provide full authentic learning experiences. Hein (1999) mentions the educational value of field-trips to places such as museums, whereas Szczepanski (2006) investigates the positive benefits of education in an outdoor setting, which may even occur in the schoolyard. Finally, Alidou et al. (2006) suggest that teachers can provide interactive learning experiences through access to local animals. In conjunction, all three studies suggest that teachers can utilize authentic learning experiences in spite of limited resources.

Furthermore, other research has suggested methods for inexpensively implementing enhanced technological resources in African universities. Herrington and Herrington (2007) assert that the use of modern technology in universities and colleges enhances instructors' capacity to provide authentic learning experiences, while Ssentamu (2013) maintains that teachers can incorporate technology to effectively manage large classes or lectures and increase

the educational opportunities for poorer or rural students. Consequently, teachers need to need to learn how to not only use but also deliver lessons using such devices. A report by the EFA (2014) proposed the implementation of interactive radio and television to reach students that lack access to traditional education settings and systems, thus providing increased access to disadvantaged, special needs, and geographically isolated students. Among fifteen international case studies on this educational use of technology, South Sudan implemented an interactive radio instruction project that involved nearly 500,000 students from 2006 to 2011. These pupils received thirty-minute lessons in English, the local language, math, and life skills. This project distributed MP3 players in areas that lacked access to radio signals. The findings of these studies showed the potential for such technologies to improve learning outcomes and overcome educational barriers such as geographical access, poor infrastructure, political conflict, and inadequate teacher qualification (EFA, 2014)

Another potential form of modern educational tools that SSA can implement involves introduction of mobile technology. In their pilot study, Traxler and Dearden (2005) investigated the use of SMS mobile technology in teacher education by establishing a distance-based learning program that delivered education to students despite the remoteness of their location. Specifically, the authors examined wholesale efforts to implement the widespread use of this technology in Kenya with the collaboration of policymakers, IT personnel, and educators (Traxler & Dearden, 2005). This study raises some promising opportunities, especially due to its cost-effectiveness; ability to connect the various stakeholders in post-secondary education; and its provision of several resources, including instructional content, conferences, links, reminders, resources, and asynchronous conversations. Despite the potential effectiveness of SMS mobile technology, this research overlooks issues concerning the accessibility of SMS in remote areas of Kenya and other SSA nations. Poor cellular access in rural areas require expensive data plans, which many students and families in SSA may lack the ability to afford, compromising the effectiveness of this project. Future studies may investigate the implementation of community WiFi hotspots in schools as a means of overcoming this barrier.

Other research argues that the implementation of modern technology increases access to quality learning opportunities. Conejar and Kim (2014) assert that the use of mobile devices, including phones, tablets, e-readers, apps, and online learning platforms, can enhance the access, equity, and quality of education. Although these devices seem expensive, the cost of new technology has dropped substantially, perhaps eventually making them affordable even in developing countries. In addition, the expenses of purchasing these devices offsets other expenditures, including books, learning materials, and transportation (Conejar & Kim, 2014; Ssentamu, 2013). The cost of technology can undergo further reduction through the free and open access of online educational resources, which makes education more affordable and accessible around the world (European Commission, 2014; Hogan et al., 2015). Thus, despite the limited resources present in African countries, these nations can implement authentic learning experiences with or without modern technology.

Policy

The first requirement for implementing authentic learning into post-secondary classrooms starts with governmental policy, which ultimately controls the development of curricula. Specifically, African governments need to develop mandatory policies for the inclusion of authentic learning opportunities in the curriculum and centralized approaches for monitoring and evaluating these policies. Jaffer et al. (2007) mention that although most African nations have the

impetus to reform educational policy to reflect workforce requirements, the progress has been stalled due to political issues in some countries, such as the Rwandan genocide of 1993 (Republic of Rwanda, 2003). Several authors have made various suggestions for policy improvement, including the use of divisions and subdivisions that reflect the levels of education and the curricular subject areas (Republic of Rwanda, 2003) as well as changes that permit multilingual education, allowing instruction in both the local and dominant foreign languages (Alidou et al., 2006). The policies surrounding higher learning institutions also require revision. One of the challenges associated with post-secondary education involves poor governance (Materu, 2007). In addition, Jumani and Jumani (2013) reported that the process of curricular reformation contains several obstacles, such as a lack of agreement among policymakers and other stakeholders. These challenges affect other areas of education, including teacher training and recruitment, which currently suffers from a lack of centralized governance in pre-service and in-service training (University of London, 2010). Lastly, Teferra and Greijn (2010) suggest that African governments need to make policy changes that aim at enhancing the existence of local knowledge and innovation. This modification would reduce the reliance on imported information and research, providing universities and industries with more local knowledge and talent.

The recent emergence of the creative economy has stimulated growth in many countries worldwide. SSA can exploit this economic trend through greater collaboration amongst and within various industrial sectors, which not only generates new knowledge but also creates jobs and overcomes skills gaps in existing industries (United Nations, 2013). Kampylis and Berki (2014) discuss the emergence of successful start-up businesses in Africa. While some case studies exist to support local knowledge and innovation, the relative novelty of this aspiration requires further investigation.

Apart from policy development, another major challenge lies in policy implementation. While a significant amount of funds have been devoted towards policy development, these plans often fail to reach the effective implementation stage, due to, a lack of knowledge and direction on the part of the implementers and practitioners. A paucity of literature currently discusses ways in which stakeholders such as policymakers, education administrators, and teachers can collaborate effectively to implement existing policies for authentic learning initiatives in SSA higher education. Future studies can investigate effective ways for these stakeholders to cooperatively establish and follow policy directions.

Educational Philosophy

Several reasons account for the continuation of teacher-centered instructional pedagogies in Africa. The cultural ideologies in Africa emphasize collectivism rather than individualism, which influences Africans to conceive the importance of individuals in terms of their contribution to a given group or society. This perspective results in the belief that all students possess the same learning abilities and the delivery of a one-size-fits-all education (Vavrus et al., 2011). In addition, this belief causes Africans to perceive the purpose of education as preparing students for their role in a larger community or society, where collective values take priority over individual needs and interests. Furthermore, in African countries, the cultural perception of education views the teacher as a central authority figure requiring respect from the students. Specifically, students conceive the teacher as an objective and distant dictator that disseminates knowledge rather than a guide or mentor that facilitates student learning (King, 2011). This central tenet causes philosophical complications in implementing student-centered approaches such as authentic learning, which provides students with control over their own learning

(Paludan, 2006). Based on these stark disparities between the educational philosophies of SSA and those of the western world, the problem of overcoming inertia or resistance to change and embracing change represents a possible obstacle to implementing modifications in educational philosophies throughout SSA nations. Bar-Yam, Rhoades, Sweeney, Kaput, and Bar-Yam (2002) discuss how educational changes must involve wholesale systematic changes rather than isolated and fragmented modifications to various parts of the system. In SSA, students and teachers may experience a substantial period of adjustment to these changes due to the departure from previous educational beliefs in these countries.

In addition, African nations suffer from a lack of original ideas and materials, requiring them to import knowledge and resources from other countries, such as those in Europe and North America (Teferra & Greijn, 2010). This cultural importation perpetuates the existence of traditional pedagogical approaches because teachers lack mastery over foreign knowledge and languages, thus causing them to revert to fact-based approaches to instruction, such as rote learning and simple recall. Similarly, African nations contain extreme cultural, ethnic, religious, and linguistic diversity among the students, which ultimately hinders the development of novel pedagogical approaches (Rudman, 2013). Another issue stalling the implementation of learner-centered educational philosophies involves the concept of educational inertia, which maintains that individuals and systems experience difficulty in overcoming the rigid nature of established values or systems (Paludan, 2006). Due to the persistence of traditional educational philosophies, students and teachers may require a significant period of adjustment (Vavrus et al., 2011). Many students accustomed to conventional teacher-centered methods may experience an initial period of frustration and resistance with lengthy projects that appear to lack a place in traditional education (Herrington et al., 2004; Oblinger, 2007). By changing the purpose of education to reflect its importance in preparing students for the workforce and realizing the demands of the new creative and knowledge-based economy, governments and educators can realize the crucial nature of placing authentic learning in the curriculum.

Curriculum

The curricula in African post-secondary institutions require updating in order to enable authentic learning in the university classroom. Specifically, the literature demonstrates consensus in its assertion that most or all university and college programs should include practical components, such as field placements, practicums, clinical practice, internships, and apprenticeships (Resnick, 1987). The implementation of field placements and practical internships in SSA postsecondary education poses several barriers, including the skills gap in the existing workforce, the paucity of funds, and the inadequate infrastructure in many countries (Rwanda Development Board, 2012; Traxler & Dearden, 2005). However, the inclusion of such practical components can overcome resource limitations by requiring students to complete work experience segments as part of the mandatory curriculum without compensation. In addition, the presence of students in industry will assist in filling the skills gap, as students possess at least a basic grasp of the theoretical understanding required in their desired field. The collaboration among students and working professionals can enhance the knowledge and skills of both parties; the professionals can share their hands-on experience with students while the students can supplement the professionals' experience with increased theoretical information. Since this teaching and learning exchange will occur on the job, the economy will retain and increase its current workforce capital without incurring additional expenditures. Thus, the addition of practical components in post-secondary courses will address existing skills gaps in several major

sectors, including construction and health (Republic of Rwanda Ministry of Health, 2013; Rwanda Development Board, 2012).

In addition, program designs need to establish a clear link between the theoretical classroom material and the practical experience in order to provide students with transferrable skills that will enable them to obtain employment upon graduation. One way in which the curriculum can reflect more authentic learning experiences involves a greater integration among subject areas (McKenzie et al., 2002). More specifically, some researchers suggest that university curricula incorporate multidisciplinary and interdisciplinary programs that include courses from a variety of traditional subject areas (Jaffer et al., 2007; Teferra & Greijn, 2010). This modification would provide a more realistic means of delivering subject material, as, in the real world, jobs and professions integrate knowledge from various fields or disciplines. Another area of possible improvement involves a redesigning of the current curriculum to emphasize vertical rather than horizontal learning. With the current curricular structure, teachers feel compelled to address all of the information in the curriculum, influencing them to "teach to the test." In this format, education focuses on the shallow and fragmented exploration of many disparate areas rather than deep exploration of major ideas (McTighe, Seif, & Wiggins, 2004). To address this issue, Teferra and Greijn (2010) propose that the government emphasize the development of fewer disciplines or major curricular areas focused on a broad national knowledge base. Thus, a reformatting of the curriculum will help to facilitate authentic learning at the post-secondary level.

Researchers provide several specific examples of current initiatives from programs that connect theory to practice. For instance, a British study proposed scenario-based classroom learning as a means of bridging theoretical classroom material with professional placement programs (Errington, 2011). Another study examined a methodology termed service learning, where students explore community issues as part of their classroom curriculum (Mariappan, Monemi, & Fan, 2005). In an Australian university setting, Stein, Isaacs, and Andrews (2004) investigate a business management course in which an instructor used authentic learning to connect the artificial classroom environment with the realistic work environment. Focusing explicitly on African countries, Zwiers (2007) suggested that curricular revisions aimed at incorporating active learning experiences could require students to develop active participation in relevant community issues, examine the history and culture of a given community or society, hone communication skills in a realistic manner, and establish positive personality traits. Curricular guidelines should also focus on the teaching of transferrable "soft" skills, such as collaboration, problem-solving, interpersonal relationships, communication, critical thinking, innovation, and leadership (British Council, 2014). Post-secondary institutions also need to teach students about the effective use of contemporary information and communication technology and the ways in which to apply this technology for enhancing their employability (Teferra & Greijn, 2010). In addition to employing the work placement component, African universities can learn from these models and use similar initiatives to transform the classroom into a more authentic learning environment that involves real-world situations.

Teacher Training

The shortage and low quality of teachers in African university settings demonstrates the need for improved teacher training and recruitment programs (Bunoti, 2010). Many potential teachers and instructors feel reluctant to enter the profession because of poor working conditions, including high student-teacher ratios, the presence of disease and poverty, poor infrastructural

environments, and low pay (World Bank, 2011). When supplied with adequate resources, governments need to increase instructor pay to meet basic living standards or provide them with additional benefits, such as subsidized housing as well as non-monetary benefits like awards and promotion opportunities (EFA 2014; World Bank, 2011). Consequently, one of the first changes required to address such deficiencies involves centralized governance, which leads to standardization of knowledge, authentic pedagogical approaches, and legitimate instructor credentials (University of London, 2010). Current teacher training colleges lack government regulations and oversight, resulting in a lack of accountability (Vavrus et al., 2011). Moreover, traditional teacher education programs in African countries use the technical rationality model, which teaches the use of technical skills to deliver instruction, rather than the reflective practitioner model, which prompts teachers to develop their own pedagogical style on the basis of previous and emerging instructional models (Otaala et al., 2013; Vavrus et al., 2011). This reliance on conventional ways of instructing new teachers results in the development of teacher-centered rather than a learner-centered pedagogies. In addition to outdated models of teacher training, issues such as language barriers (Alidou et al., 2006), limited resources, and poor infrastructure (Traxler & Dearden, 2005) also undermine the quality of teacher education in African universities.

Despite the reliance on traditional teacher instruction models, teacher-training methods have shown some recent improvement, leading to the promotion of a learner-centered approach in SSA countries. Many teachers feel challenged by their lack of familiarity with the foreign language in which they must teach, leading them to use teacher-centered instructional approaches such as chorus, repetition, recall, and memorization (Alidou et al., 2006). Language barriers result from the regional mobility of teachers and the mandated policy to instruct in a second language, such as English, French, or Spanish (Alidou et al., 2006; Zwiers, 2007). Another aspect of teacher training that demonstrates gaps involves the use of technology. Banas and York (2014) reported that while many teachers express comfort with using technology in lesson planning and communication, they lack the ability or desire to integrate it in their lesson delivery. These authors subsequently indicated that teachers who have experience and understanding with using technology to provide lesson material demonstrate a greater likelihood of using technology in content delivery (Banas & York, 2014). Similarly, Rule (2006) asserts that pre-service teachers require meaningful opportunities to apply authentic learning in classroom exercises and practicum placements.

In addition to student teachers, in-service teachers can also make adaptations to their practices by learning how to engage in curriculum planning for authentic learning (Jumani & Jumani, 2013). Kangai and Bukaliya (2011) suggest the use of distance education as a means of increasing the opportunities for aspiring as well as current teachers to obtain the necessary credentials, thus increasing the number of qualified teachers. African nations can also improve the ongoing professional development opportunities available to in-service teachers. The literature recommends initiatives such as teacher workshops or forums; professional learning communities; teacher collaboration with administrators, faculty/staff of higher education institutions, and businesses; mentoring or support from peers and supervisors; peer assessment, and online distance learning initiatives (Kanuka & Nocente, 2002; Potts & Schlichting, 2011; Reitsma & van Hamburg; 2013; Westbrook et al., 2013). The research has suggested that some of these improvements to teacher training programs may improve the knowledge, quality, performance, and pedagogical methods of teachers, eradicating problems associated with unqualified university instructors (Bunoti, 2010; EFA, 2014) and establishing more authentic

learning opportunities that connect education directly to modern workforce requirements. King (2011) discusses Ethiopia's Higher Diploma Programme, a mandatory teacher education program, which implements five components associated with student-centered pedagogies, such as active learning, ongoing assessment, reflective exercises, major research projects, and a work placement. Other African countries can utilize similar examples to provide teachers with quality education geared towards authentic learning.

One possible obstacle to the use of in-service training for working teachers involves the existing teacher shortage in SSA countries. Since these countries have an insufficient number of qualified teachers, these nations possess even fewer capable substitute teachers. Despite this teacher shortage, SSA countries can still implement successful professional development programs by enabling working teachers to complete the workshops and courses during their personal downtime, such as evenings, weekends, holidays, and summer breaks. Although teachers may feel overwhelmed by the additional commitment, these courses can provide incentives, such as increased pay and funded travel (EFA, 2014; World Bank, 2011). In addition, many of these courses can be delivered in an online and interactive manner, which saves travelling funds and the need for substitute teachers while overcoming obstacles associated with inadequate infrastructure (Diamond & Gonzalez, 2014; Kangai & Bukaliya, 2011; Kanuka & Nocente, 2012; Traxler & Dearden, 2005).

Stakeholder Collaboration

The final area that requires consideration entails the collaboration amongst multiple stakeholders, including governments, institutions, program designers, instructors, and students. Most African nations feature weak links between the various stakeholders, resulting in any authentic learning initiatives to appear fragmented and ineffective on a broad scale. These weak links result in ambiguity concerning the mission of education as well as lack of student engagement and the perpetuation of teacher-centered approaches (Newmann et al., 2007). The lack of qualified teachers, government officials and education administrators, who lack the training and knowledge required to monitor and evaluate educational outcomes, results in other problems, such as apathy from parents and ministers (Watkins, 2013). These detrimental outcomes point to the necessity for improved collaboration amongst all stakeholders in education, including those involved in the transition period from graduation to workforce participation.

Wholesale changes that motivate a shift from the traditional teacher-centered mode of instruction to student-centered education require the involvement and coordination of all stakeholders. For instance, policies, plans and budgets need to align with the available resources and capabilities. Many African governments assume a decentralized approach to education, where the national government establishes standards and policies and the local governments implement these policies and administer schools and education institutions (Republic of Rwanda, 2003). This two-tiered approach to education increases the opportunities for miscommunication and misunderstanding among stakeholders and requires precise coordination in order to reduce inadequacies. In order to effect positive changes, Africa can consider developed countries as a model for collaborative efforts. For instance, Sattler (2011) discusses the implementation of work-integrated learning in Ontario's post-secondary sector. This initiative included collaboration amongst several stakeholders, including students, institutions, employers, and community organizations, to provide students with applied learning opportunities in the classroom, community, and industry (Sattler, 2011). At the same time, however, Teferra and

Greijn (2010) suggest that African nations create their own knowledge, information, and technology. These increased innovations would improve both the education system by providing the government with culturally based knowledge on the effective structuring of the education system (Teferra & Greijn, 2010; United Nations University, 2008). Some other improvements suggested in the literature include accountability, target setting, monitoring tools, regulation methods, compliance of individual institutions, and quality assurance (DFID, 2012; Materu, 2007).

Furthermore, authentic learning initiatives can assist in bridging the gap between stakeholders, especially in connecting students and schools to potential employers. One authentic learning tool that can incorporate multiple stakeholders involves the use of the professional portfolio. Clementz and Pitt (2002) describe this tool as a means by which students can exhibit their abilities and achievements to various stakeholders, including instructors, preceptors, supervisors, employers, admissions committees, and graduate schools. The portfolio displays authentic learning through its incorporation of many artifacts that connect student work to the real world: work samples, photographs, digital media, recommendations, field notes, and student transcripts (Clementz & Pitt, 2002). The use of technology can also facilitate stakeholder connections; digital media, such as mobile and computing technologies, can enable students to share their work with teachers, parents, governmental members, community organizations, and even corporations (Traxler & Dearden, 2005). A 2011 report by the United Nations stated that private sector companies have the ability to contribute to education by sharing their knowledge of labor trends, such as emerging sectors, shortages or surpluses, and changing occupational requirements. Among all stakeholders, the government needs to make the first step towards revising post-secondary education to align more closely with the modern labor market and include authentic learning initiatives.

Conclusion

This paper has advocated for the inclusion of authentic learning in the post-secondary education of African nations. Authentic learning involves a relatively modern approach to education that provides real-world tasks targeting essential skills such as critical thinking, creativity, problem solving, innovation, communication, and collaboration. While educators should implement authentic learning at all educational levels, this approach necessitates the most urgency at the post-secondary level. Employers require university and college graduates with employable skills that they can transfer immediately from the classroom to the workplace environment. From a global perspective, the modern workforce requires employees that demonstrate these skills in a service-oriented economy. Authentic learning provides numerous benefits to all stakeholders, including students, teachers, educational administrators, employers, the government, and the economy as a whole. Although Africa lags behind the rest of the world in terms of its education and economy, its workforce has evolved to incorporate a creative economy that necessitates employees with employable skills. Unfortunately, the education systems in African nations, especially the post-secondary or tertiary levels, still require modification to incorporate increased authentic learning opportunities. While some efforts have been made to address this need, these initiatives have been fragmented, failing to result in wholesale changes to the economy. Thus, African post-secondary institutions require organized collaboration from all stakeholders to implement authentic learning opportunities. The areas that require change include policy, funding, resources, technology, curriculum, and teacher training. However, the first step must begin with the government and a centralized policy that addresses

all of the previous areas required for establishing authentic learning at African post-secondary institutions.

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