Planning for Blended Pedagogies: Appropriateness for Modern Transformation in the 21st Century

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Abstract: *Currently, development in the world is knowledge-based, largely depending on the exchange of information through Information and Communication Technology (ICT). Therefore, countries equipped with technology and knowledge find it easy to participate in the "new electronic world" and tend to be the main players in its "socio-cultural and economic developments". To participate in the global knowledge economy, it is necessary to integrate ICT in education as a basis. However, the integration of ICT in education is to a large extend, determined by the countries' planning approaches that are assumed to be the necessary precondition for the successful implementation of the technology.Therefore, this paper hopes to uncover the appropriateness of planning approaches in various countries as per Human Development Index (HDI) groups adopted for implementation of blended pedagogies for participation in the global knowledge economy. Generally, countries in the very high and high HDI groups adopted the policy planning and analysis approach whereas those in the medium and low groups adopted a variety of approaches inclusive of collaborative and policy planning and analysis approaches. The paper concludes that the successful implementation of blended pedagogies relies on the appropriateness of the adopted planning approaches.*

Keywords: planning, blended pedagogies, modern transformation

Introduction

For effective engagement in the knowledge economy and national development purposes, the most important sector that requires change is education (Button, Harrington and Belan, 2014; Wolff, Wagner, Poznanski, Schiller and Santen, 2015; Glušac, Makitan, Karuović, Radosav and Milanov, 2015; Skryabin, Zhang, Liu and Zhang, 2015; Valtonen, Kukkonen, Kontkanen, Sormunen, Dillon and Sointu, 2015). In the context of information societies, ICT is perceived as one of the most important tools in changing the

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education sector (Button et al., 2014; Skryabin et al., 2015). Therefore, many countries have implemented educational ICT related policies and also invested resources in necessary infrastructure in schools with the hope to build learners' 21st century skills necessary for participation in the global knowledge economy (Button et al., 2014; Wolff et al., 2015; Glušac et al., 2015; Valtonen et al., 2015). The implementation of educational ICT is assumed to be helpful in increasing opportunities for teaching and learning as well as for reducing the gap between socioeconomic factors and educational system outcomes (Button et al., 2014; Wolff et al., 2015; Dolencand Aberšek, 2015; Glušac et al., 2015; Skryabin et al., 2015; Valtonen et al., 2015). Furthermore, the integration of ICT in education is capable of building talented teacher communities through which best practices and success stories can be shared and thus motivating each other and also improving the quality of education (Button et al., 2014; Skryabin et al., 2015). However, the integration of ICT in education is to a large extent, determined by the countries' planning approaches that are assumed to be the necessary precondition for the successful implementation of the technology. Therefore, this paper hopes to uncover different planning approaches adopted in various countries and determine their appropriateness for implementation of blended pedagogies in preparation of learners for participation in the global knowledge economy.

To fulfil its purpose, this paper consists of six sections inclusive of this introduction and the conclusion. The second section provides a brief discussion of the planning approaches adopted for the implementation of blended pedagogies. The international and South Africa's planning approaches and experiences towards the implementation of educational ICT are evaluated in sections three and four, respectively. Section five uncovers the appropriateness of the adopted planning approaches for the implementation of educational ICT in the modernized 21st century. Then the paper concludes that the successful implementation of blended pedagogies relies on the appropriateness of the adopted planning approaches.

Generic Planning Approaches

Planning is future-oriented, and it is based on certain norms and standards that seek to reduce future uncertainties (Tsheola, 2011). Generally, planning is defined as "a goal-oriented activity that is carried out to prepare for the performance of a given task" (Kunitz, 2015: 135). There are multiple approaches to the modern planning processes including economic planning, physical development planning, policy analysis and planning, interpretative planning and collaboration planning, among others (Dale, 2004; Mandarano, 2008; Farhoodi, Gharakhlou-N, Ghadami, and Khah, 2009; Theron, 2008, Bakhshizadeh, Hosseinpour and Pahlevanzadeh, 2011; Tsheola, 2011; Hadaya and Cassivi, 2012; Faehnle and Tyrväinen, 2013; Talpur, Napiah, Chandio. Qureshi, and Khahro, 2014; Deng, Lin, Zhao and Wanga, 2015; Drazkiewicz, Challies and Newig 2015; Elbakidzea, Dawsonb, Anderssona, Axelssona, Angelstama, Stjernquistb, Teitelbaumc, Schlyterb, and Thellbrod, 2015; Hossain, Scholzand Baumgart, 2015; Kunitz, 2015; Roy,

2015). In addition to the planning goals, planning activities and operational levels of planning activities are also used to classify planning with emphasis on the planning exercise design and stakeholders' professional positions and their roles in planning (Tsheola, 2011).

However, at the centre of these planning approaches, there are two broad categories of development planning namely object-centred, substantive or technical planning and process-centred, procedural, decision-centred or institution-centred planning (Dale, 2004; Bakhshizadeh et al., 2011; Tsheola, 2011). Object-centred planning is based on substance or subject matter whereas process-centred planning involves mechanism or process (Dale, 2004; Tsheola, 2011). Theron (2008) relates the object-centred and process-centred planning to blueprint nuts-and-bolts and social learning process heart-and-soul of planning, respectively. Economic planning and physical development planning approaches are categorised as object-centred planning whereas interpretative planning and collaboration planning approaches are considered as part of process-centred planning while policy analysis and planning locates its roots in both categories (Dale, 2004; Bakhshizadeh et al., 2011; Tsheola, 2011). Additionally, planning is guided by a number of principles inclusive of comprehensiveness (consideration of all important elements), efficiency (does not waste time, money and other resources), inclusiveness (all people and organizations affected have opportunities to be involved), informativeness and transparency (all stakeholders understand what they are involved in and related processes), integration (individual and short-term decisions support strategic long-term goals) as well as logic (each step leads to the next) (Farhoodi et al., 2009; Theron, 2008; Bakhshizadeh, et al., 2011; Tsheola, 2011; Hadayaand Cassivi, 2012; Faehnleand Tyrväinen, 2013; Talpuret al., 2014; Deng et al., 2015; Drazkiewicz et al., 2015). Therefore, countries need to adopt appropriate planning approaches for the successful implementation of blended learning and thus, the succeeding two sections discusses the international and South Africa's planning experiences, respectively. The next section discussed the international planning experiences for blended pedagogies.

International Planning Experiences for Blended Pedagogies

As already noted in the previous section, planning is based on certain norms and standards that seek to reduce future uncertainties therefore, multiple approaches can be adopted for the planning of blended learning in various countries. As per HDI group, planning models of various countries will be used to juxtapose the appropriateness of South Africa's planning approaches towards blended pedagogies. To fulfil the objectives of this section, four countries are discussed across the four HDI groups: Republic of Korea with very high, Thailand with high, Zambia with medium and Kenya with low HDI, respectively.

Republic of Korea

The rapid development of ICT in Korea and its fast penetration into public and private sectors emanate from the policy initiatives by the government (Hwang, Yang and Kim, 2010; Yoo, Han and Huang, 2012; Lee and Lee, 2015; Park,Schallert, Sanders, Williams, Seo, Yu, Vogler, Song and Williamson, 2015; Webster and Son, 2015; Park,Yu and Jo, 2016). The Korean Government has adopted a three-pronged approach of intervention to rapidly develop ICT in the country. Firstly, the government has created the "right environment for the development of ICT" mainly by establishing "pro-market policies of liberalisation and privatisation of the ICT industry". Secondly, it has intervened at the "non-market end of the supply chain" through the funding of the public internet backbone known as the Korean Information Infrastructure (KTI). Thirdly, the government has been involved at the "non-market end of the demand chain" by providing ICT training for about ten million Koreans inclusive of homemakers and those who are employed in government agencies, the army and schools (Yoo et al., 2012; Lee and Kim, 2015; Lee and Lee, 2015;). The role of government initiatives in Korea has been crucial to the rapid development of ICT in general, particularly to the promotion of e-learning (Hwang et al., 2010; Park et al., 2015; Webster and Son, 2015; Park et al., 2016). The Korean government has also developed specific plans to turn the country into an "information society" within a short period (Yoo et al., 2012; Lee and Kim, 2015).

With the hope to "modernise and globalize", the Ministry of Education and Human Resources Development in the Republic of Korea made massive investments in educational ICT between 1978 and 2001. These investments were guided by "The Comprehensive Plan for Developing ICT Use in Education" and the "Brain Korea (BK21) Plan" which aimed at improving infrastructure in schools as well as providing teacher training and promoting research (Hwang et al.., 2010; Lee and Lee, 2015; Park et al., 2015; Webster and Son, 2015; Park et al., 2016). The Brain Korea Plan involved a two-phase process in which the first phase (1999-2005) was considered very successful that the budget for the second phase (2006-2012) was increased (Hwang et al., 2010; Lee and Lee, 2015). The Closing the Digital Divide Act of 2000 established the Korea Agency for Digital Opportunity and Promotion (KADO) as well as the Digital Divide Committee as part of the digital divide project wherein the latter committee was responsible for facilitating community participation (Hwang et al., 2010; Lee and Lee, 2015). For the duration of the project, 500 000 primary and secondary school learners mainly from low-income families were given an opportunity to participate in extra-curriculum computer courses between the years 2000 and 2001 (Hwang et al., 2010). Additionally, 50 000 low-income learners particularly with good grades received free personal computers with a free five-year internet subscription (Hwang et al., 2010; Lee and Lee, 2015). During the same time, the government body that oversaw education in Korea changed its name from the Ministry of Education and Human Resources Development to the "Ministry of Education, Science and Technology (MEST)" in order to reflect on the growing interests in educational technology

(MEST, 2009). The success of Korea's ICT sector is largely due to the policy interventions that the government has adopted with the key goal being to promote universal access to technology. Thus, for development of ICT and implementation of e-learning, Korea has adopted the policy analysis and planning as well as the community development planning approaches mainly driven by the government.

Thailand

ICT implementation in Thailand across various sectors was formally initiated since 1992 when the government set up the National IT Committee which is a high level policy body chaired by the Prime Minister (Saekow and Samson, 2011; Khlaisangand Likhitdamrongkiat, 2015; Ninlawan, 2015; Pruet, Ang, and Farzin, 2016). One of the key responsibilities of the National IT Committee was to develop a number of policies and plans that are used as frameworks and guidelines to govern ICT development in the country (Saekow and Samson, 2011). The policies and plans include the National IT Policy called IT 2000, the second ten-year phase of national IT policy or IT 2010, the Thailand ICT Master Plan Issue 1 (2002-2006) and the Second ICT Master Plan (2009-2013). With the IT 2000, the goal of the National IT Committee was to ensure that the country utilize ICT to "achieve economic prosperity and social equity" (Saekow and Samson, 2011; Khlaisangand Likhitdamrongkiat, 2015; Ninlawan, 2015; Pruet et al., 2016). This policy had three main objectives namely: "building an equitable national information infrastructure", "investing in human resource to accelerate the supply of ICT manpower and developing an ICT literate workforce" and "achieving good governance through the use of ICT" (Saekow and Samson, 2011; Khlaisangand Likhitdamrongkiat, 2015; Ninlawan, 2015). Although many development programs were achieved under IT 2000 policy, those concerning human resources and government sector were still incomplete. One crucial project worth mentioning is called the "Schoolnet Thailand" which was intentionally planned for empowering all schools by giving them access a large pool of online information resources and using the Internet without access charge regardless of where they are located (Saekow and Samson, 2011; Pruet et al., 2016). The implementation of "Schoolnet Thailand" resulted in several thousand schools being connected to the Internet and the initiation of programmes and activities necessary to promote the use of technology for teaching and learning.

The IT 2010 was established in order to exploit the benefits of ICT necessary to move Thailand to the "knowledge-based society and economy". The development focused on the good use of ICT that would drive overall national economic and social development by "building human capital", "promoting innovation", and "investing in information infrastructure meant to promote the information industry" (Saekow and Samson, 2011). To achieve these goals, five main flagships were identified which included "e-Society", "e-Government", "e-Commerce", "e-Industries", and "e-Education" (Saekow and Samson, 2011; Khlaisangand Likhitdamrongkiat, 2015; Ninlawan, 2015). The e-Education flagship covered issues concerning life-long learning, computer literacy, human resource development, virtual education as well

as creation of useful information, contents and knowledge, among others (Saekow and Samson, 2011). As a result of some of its unfulfilled objectives, the IT 2010 plan bore the Thailand ICT Master Plan Issue 1 (2002-2006) wherein the latter hoped to close the digital divide, continuously develop human capacity and link policy with practice. Additionally, the Second ICT Master Plan (2009-2013) which is both a tool and an opportunity for increasing the competitiveness of Thailand was developed by the National IT Committee (Saekow and Samson, 2011; Khlaisangand Likhitdamrongkiat, 2015; Ninlawan, 2015; Pruet et al., 2016). Its focus was on "developing ICT human resources;" "developing high speed ICT networks"; and "developing good governance frameworks" for national ICT inclusive of e-learning in the country (Saekowand Samson, 2011; Ninlawan, 2015). Additionally, as part of the One Tablet per Child Policy of 2012, the Ministry of Education has distributed 800 000 Tablet computers to learners which are installed with a range of learning contents (Ninlawan, 2015; Pruet et al., 2016). The content in the Tablets is meant to develop learners' creativity and innovation abilities in an attempt to build their 21st century skills. Therefore, from the country's ICT planning experiences, it is clear that Thailand has adopted policy analysis and planningapproach which in this case gives the state planning control of educational ICT over other institutions in the country.

Zambia

The National e-Learning Strategic Plan that has been developed by the Ministry of Education promotes the development of an ICT infrastructure in technical and vocational education and training (TEVET) institutions (Ministry of Education, 2010; Haßler, Hennessy and Lubasi, 2011; Haßler, Hennessy, Lord, Cross, Jackson and Simpson, 2011; Annie, Ndhlovu and Kasonde-Ng'andu, 2015). The plan outlines a number of objectives inclusive of making ICT infrastructure available and fully integrated and effectively functional throughout Zambia, the application of e-learning in all learning and socio-economic activities as well as the government's explicit commitment to the establishment of e-learning throughout the country (Ministry of Education, 2010). To practically realise the objectives, the Zambian government together with international stakeholders such as the Asian Development Bank, Malawi Innovation Challenge Find and Endeva, among others, initiated the iSchool project which delivers the Zambian National Curriculum online with the hope change the teaching methods that are used in schools by delivering exciting and hands-on knowledge acquisition to learners, regardless of their age, ability and location as well as providing necessary teachers' training (Haßler, Hennessy and Lubasi, 2011; Haßler, Hennessy and Lord, et al., 2011). The project uses interactive e-learning that relies on ICT as a delivery mode in order to enhance productivity of the country's workforce and thus provide computers, netbooks and/or Tablets as well as Internet connectivity to selected schools (Haßler, Hennessy and Lubasi, 2011; Haßler, Hennessy and Lord, et al., 2011). Despite that the country had developed its own National e-Learning Strategic Plan to respond to the needs of the 21st century learners, collaborative planning approach has been

adopted for the delivery of e-learning infrastructure and the development of skills among teachers and learners.

Kenya

Various legislation in Kenya inclusive of the Science and Technology Act, Cap. 250 of 1977, the Broadcasting Corporation Act of 1988 and the Communications Act of 1998 consider ICT adoption for national development (Ministry of Information and Communications, 2006). In response to the legislation, the New Partnership for Africa's Development e-Africa Commission has been implementing the New Partnership for Africa's Development (NEPAD) e-School project since 2003 in 17 African countries including Kenya, among others (NEPAD e-Africa Commission, 2009; Onderi, Ajowiand Malala, 2013; Nyagowa, Ochollaand Mutula, 2014). The initiative provides a framework and a systematic approach for ICT integration in education on the African continent. The objectives of the e-School initiative are to "impart ICT skills to students in order to enable them to participate in the knowledge society, enhance teachers' capacities through the use of ICT in teaching, and improve school management and increase access to education" (NEPAD E-Africa Commission, 2009 cited in Nyagowa et al., 2014: 236). Through this initiative, NEPAD estimated that by 2008 and 2013, all youth who completes their studies from an African high school and primary school respectively, would be ICT literate (Onderi et al., 2013; Nyagowa et al., 2014). The common ideological framework behind the deployment of e-learning in Kenya is to "increase productivity in schools, impart teamwork skills and lifelong learning habits among learners and deal with the dual task of both increasing access to school and improving quality of teaching" (Nyagowa et al., 2014: 236). To realise the goals set by the National ICT Policy multiple stakeholders inclusive of the private sector headed by the Ministry of Education, Science and Technology as well as the NEPAD e-Africa Commission collectively planned for the implementation of blended learning within various educational institutions (MOESand T, 2004; Onderi et al., 2013). Therefore, for planning of blended learning, Kenya has adopted both collaborative as well as policy and analysis planning approaches.

Republic of Korea's adoption of policy analysis and planning approach suggests that most countries in the very high HDI group would probably adopt the same approach for planning of the implementation and adoption of blended learning.Thailand's experiences points out that for countries in the high HDI group, policy analysis and planning is adopted as the most common approach towards the implementation of blended learning. The planning approaches adopted by the countries in this HDI group are similar to the one embraced by very high HDI countries which are both categorized as developed countries.For Zambia, perhaps the adoption of collaborative planning especially with international organizations suggest that the country accepts that it needs support for the successful implementation of blended learning. As a developing country, it also need to learn from developed countries hence the partnership with well-developed and established organizations.Lessons can be drawn from the Kenyan planning

experience that given the country's level of development, partnerships especially from organizations of developed countries, are needed for their guidance and sharing of experiences of planning for successful implementation of blended learning. Thus, developing countries adopt a variety of models for the governance of successful implementation of blended learning which is an expectation for South Africa too. In the succeeding section, the national planning approaches adopted by South Africa for the development of 21st century skills within the society are discussed.

South Africa's National Planning Approaches towards Building a Knowledge Society

For a country that strive to be "globally competitive", an effective ICT system is required which is characterised by infrastructure that provides the backbone to a "modern economy" and its connections to the "global economy" (National Planning Commission (NPC), 2012).Thabo Mbeki, the former president of South Africa has emphasized the importance and contribution of ICT in social and economic development at a number of the country's and international fora. He declared that "We must continue the fight for liberation against poverty, against under-development, against marginalisation" and "… information and communication technology … is a critically important tool in that struggle" (Imbizo for African Youth, 2001 cited in Department of Education, 2004). Therefore, appropriate planning approaches are needed for a country like South Africa to use ICT to liberate itself against poverty and inequality and under-development.

Currently, the growth of wealth in the world's largest and successful economies is created by knowledge-based industries that rely heavily on human capital with 21st century skills and technological innovation (Department of Education, 2004; Department of Science and Technology (DST), 2007; NPC, 2012). The White Paper on e-Education (2004) guides South Africa's approach towards the integration of ICT in pedagogy so as to increase access to learning opportunities by redressing inequalities, improving the quality of teaching and learning as well as providing personalised and real world learning experiences. Schools that implement "e-Education" must utilize ICT to enhance teaching and knowledge acquisition, support the curriculum, access information that increases knowledge, inquiry and depth of investigation as well as planning and management of various school activities (Department of Education, 2004). Accordingly, the use of ICT in South Africa's schools should encourage:

> "Improved inventive thinking skills, such as creativity, problem solving, higher-order thinking skills and reasoning, along with improved effective communication. Improvements in interpersonal skills, such as writing, public speaking, teamwork and collaboration, and improved productivity skills, including creating high-quality products, have also been reported. ICTs encourage a teaching and learning milieu which recognises that people operate differently, have different learning styles and have culturally diverse perspectives. ICTs embrace inclusive education by providing opportunities, alternative methods of instruction and flexible assessments for learners who experience barriers to learning.Benefits to the broader society include increased opportunities for lifelong learning, communication and exchange essential to democratic living, and the creation of a pool of globally competitive human resources. The development and implementation of e-Education will create the

pool from which our country can draw professional citizens and export African expertise around the world" (Department of Education, 2004: 16).

Therefore, the policy hopes that "Every South African learner in the general and further education and training bands will be ICT capable, that is, use ICTs confidently and creatively to help develop the skills and knowledge they need to achieve personal goals and to be full participants in the global community" (Department of Education, 2004: 17). To successfully integrate ICT in education, all teachers require the knowledge, skills, values and attitudes, as well as the necessary support to become mediators of learning, interpreters and designers of learning programmes, assessors and subject specialists, among others (Department of Education, 2004).

To prepare for the participation in the global knowledge economy, the Department of Science and Technology (DST, 2007) published South Africa's ten-year innovation plan. The plan, in support of various sector departments, hopes to transform South Africa into a knowledge-based economy, in which its economic growth is led by the "production and dissemination of knowledge" to enrich all fields of human endeavour. That is, South Africa's innovations in science and technology should be able to effectively manage "the negative effects of climate change in Africa; fighting crime; producing drugs to combat disease; developing sustainable energy solutions; introducing drought-tolerant, disease-resistant crops; devising "intelligent" materials and manufacturing processes; revolutionising our communications; and changing the work we do and the way we do it" (DST, 2007: 4)Accordingly, South Africa's knowledge-based economy depends on four interconnected and interdependent pillars namely: innovation, economic and institutional infrastructure, information infrastructure as well as education. In this regard, the success of the plan would be measured by the degree to which science and technology contributes towards enhancing productivity, economic growth and socioeconomic development (DST, 2007). A society that effectively uses its "knowledge systems" and "human capital" to address development challenges and problems in their country while exploiting economic opportunities in a sustainable way is what South Africa needs to compete with developed nations in the knowledge-based economy.

According to the National Development Plan (NDP) 2030, "science and technology continue to revolutionise the way goods and services are produced and traded" which the former can also "be leveraged to solve some of the biggest challenges in education…" (NPC, 2012: 33). Hence, teaching and learning materials can be delivered electronically to all the areas in South Africa inclusive of remote villages. In 2012, the NPC confirmed that about 17% of South Africa's population had access the Internet, a significant number that is expected to rise by at least 20% per annum. As a result, the use of digital technologies has transformed mostly the youth who embrace the "new media", and this transformation represents a potentially effective intervention of "fostering social inclusion". However, for South Africa to contribute massively to the global scientific and technological transformations, the country still needs to

develop its "innovative edge" which requires "greater investment in research and development, better use of existing resources, and more nimble institutions that facilitate innovation and enhanced cooperation between public science and technology institutions and the private sector" (NPC, 2012). Although the high costs of broadband Internet connectivity has been identified as a major challenge, all South Africans should be able to "acquire and use knowledge effectively". Therefore, the NPC (2012) recommended that institutional arrangements to manage ICT environment must be better structured and developed in order to ensure that the country addresses the digital divide among its citizens.

South Africa's national focus on ICT as a catalyst for participation in the global knowledge economy has provoked the initiation of ICT integration in education. The NDP 2030 vision on education states that "education, training and innovation system should cater for different needs and produce highly skilled individuals. The graduates of South Africa's universities and colleges should have the skills and knowledge to meet the present and future needs of the economy and society" (NPC, 2012). To practically realise the vision, partnership across the South African education system and internationally accredited institutions should lead to higher levels of innovation, creativity and collaboration. Additional, South Africa's investments will be channelled towards people development through education which will be used as an instrumental that will create societies that are better able to respond to the 21st century needs associated with "lifelong learning", "continuous professional development" and "knowledge production" alongside innovation creativity and collaboration which are central to building the capabilities of individuals and the nation as a whole (NPC, 2012). Planning, governance, infrastructure, skills and culture however, must be considered for a country like South Africa with a medium HDI level. The NDP 2030 asserts that in planning and governance of the adoption and implementation of e-learning and/or blended learning, the interests of all stakeholders in education should be integrated and aligned to support the goal of achieving effective educational goals that addresses community needs and national development. Furthermore, educational institutions should be providedwith the capacity to implement policy and where it is lacking, the challenge should be addressed urgently. South Africa hopes that by 2030 all schools would meet the minimum standards of ICT infrastructure development. According to the NDP 2030, "High speed broadband should be readily available and incorporated into the design of schools. This will enable greater use of technology in education and enhance the classroom experience for both teachers and students" (NPC, 2012: 303).

Moreover, distance education stands a good change of also being expanded especially with institutions of higher learning such as universities and colleges. Distance education is defined by the Department of Higher Education and Training (DHET) of South Africa as "a set of teaching and learning strategies (or educational methods) that can be used to overcome spatial and/or temporal separation between educators and students" (DHET, 2011: 4). Accordingly, the distance education approach adopts a "multi-mode of delivery" which comes with opportunities to remedy the need for skilled human resources

through increased and speedy access to educational ICT, options for "retraining and personal enrichment", and the "balancing of inequalities between age groups" (DHET, 2011). The advancements in educational ICT and upfront investments especially in human resources are needed in technological and curriculum designs as well as quality assurance and monitoring of such a system. The Department of Higher Education and Training (DHET) in South Africa recently published two papers that guide the use implementation of blended learning especially in the provision of distance learning namely: the White Paper for Post School Education and Training (DHET, 2013) and the Policy for the Provision of Distance Education in South African Universities in the Context of an Integrated Post-school System (DHET, 2014). The former estimated that by 2030, South African universities could expect a total enrolment of approximately 1.6 million students, which would be impossible for "traditional campus-based universities" to accommodate such huge numbers; therefore, blended learning should play an important role in future to assist in realising the educational dreams of the increasing numbers of students (DHET, 2013). Generally, South Africa has developed plans for the implementation of what it considers as effective and sustainable ICT infrastructure for development of skills necessary for the country's participation in the global knowledge economy. The country has adopted the policy and analysis planning approach for its implementation of educational technology. Although South Africa is a developing country, it seems to be copying what developed countries are doing with regard to planning of blended learning. The subsequent section provides an overview of the appropriateness of the adopted planning approaches for blended pedagogies.

Appropriateness of the Planning Approachesfor Modern Transformation in the 21st Century

The establishment of the e-learning environment depends primarily on adoption of suitable planning approaches and governance models as well as the necessary infrastructure, culture and skills. Thus, planning, governance, infrastructure, culture and skills collectively are necessary and sufficient conditions for successful educational transformation towards blended pedagogies. Ideally, planning for blended pedagogies must involve decision making, policy formulation for the realization of set goals, programmes of action and stakeholder participation with the aim of current and future sustainability (Dale, 2004; Theron, 2008; Tsheola, 2011). Thus, the norms and standards of blended pedagogies should be established on the grounds of the two broad categories of development planning, namely object-centred and process-centred planning with more emphasis on stakeholder participation. Apart from other stakeholders participation, planning for blended pedagogies requires participation of direct beneficiaries, inclusive of teachers and learners. Planning for blended pedagogies must take into consideration the context of teaching and learning, digital technology and associated infrastructures, teaching and learning designs and ICT skills, among other factors (Wolff et al., 2015; Glušac et al., 2015). Accordingly, blended pedagogies require a holistic planning approach, rather than e-planning alone, which supports partnerships, people-centeredness as well as attendant physical, economic and social aspects (Theron,

2008; Tsheola, 2011). Beyond planning approaches, models of governance are crucial preconditions for blended pedagogies.

In South Korea, a study aimed at discovering the insights into teachers' decision-making related to consideration of technology use was conducted by Webster and Son (2015). The study eventually produced a set of thirteen concerns that directly affect teachers' decisions concerning educational technology which include "risk taking, image, learning seeking, universal site use, sociability, efficiency, cultural alignment, real materials usage, student-centered ideas, influence of learning experiences, technology use in the class, technology training, and attitude towards technology" (Webster and Son, 2015: 91). Therefore, balance between teachers' internal factors as well as external concerns and demands form the basis on which teachers make decisions about the adoption of blended learning. This study confirms that although teachers received training, their levels of self-efficacy are still low whereas their educational culture does not support the adoption of blended learning. The low levels of self-efficacy and lack of appropriate educational culture in this regard are blamed on the lack of support from government during the implementation phase of adopting blended learning. Teachers more often than not, struggled to apply technological skills gained from their education, training and experience. Instead, teachers were "doing what works rather than what they knew works best" (Webster and Son, 2015). Decades after the introduction of educational technology in Korea, teachers still follow the same practices that they were taught in leaving teaching and learning in the country to take place in an academic world that is separate from technological reality which current learner live in. Classroom observations confirmed that:

> "Students ubiquitously used their Smart Phones to text (e.g., Kakao talk) with friends or to view various forms of media directly from the Internet while on theway to their classes. However, once they entered the classrooms, they were usually told to turn off their electronic devices, to open up their textbooks, and to listen for an hour and fifteen minutes to a teacher in front of a chalkboard. It was as if they had been transported back to the 1950s (or earlier) whenever they entered a classroom. The relief on many of their faces as they turned on their phones upon leaving and checked messages seemed like divers taking their first breaths again after plunging into the depths" (Webster and Sons, 2015: 92).

The inability of teachers to adopt blended learning is problematic as it does not conform to the "basic concept of continuity in learning for learners" (Dewey, 1938 cited in Webster and Son, 2015) and the notion that "school learning is at odds with authentic ways of learning to be in the world, and with social practice beyond the school gates" (Lankshear and Knobel, 2003 cited in Webster and Son, 2015).

Generally, ICT infrastructure in Thailand is growing at a stable pace although its quality is not sufficient enough to fulfil the needs of the population (Saekowand Samson, 2011; Khlaisangand Likhitdamrongkiat, 2015; Lee and Kim, 2015; Ninlawan, 2015; Pruet et al., 2016). With regard to access to computer, 26.8% of the total population have unrestricted access to the technology. In education, the ratios of the number of computers to the number of learners and number of computers per school are currently 1:40 and 6:1, respectively in schools under the Office of Basic Education Committee within the Ministry of Education

(Lee and Kim, 2015). Moreover, more than half of the teachers in Thailand have already been trained on e-learning. Despite a number of achievements in e-learning, the Thai government is still investing massively in educational ICT. For example, more money has been invested for hardware, software and digital content development necessary for the integration of e-learning with conventional didactics. Mainly, the goals of these investments are to "raise the ratio of the number of computer to the number of learners to 1:20, acquire digital content for every subject area and every class level, offer professional development for teachers and educational personnel and provide secured and stable school network infrastructure" (Lee and Kim, 2009: 1322 cited in Lee and Kim, 2015). In terms of the future trend in e-learning, the Thais intend to use the technology of the future (advanced technology) to help conquer the digital divide.

Whereas a national ICT policy has been developed and adopted and adaptive model has been adopted for the governance of educational ICT, Zambia still experiences lack of institutional and sectoral policies on the integration of ICT into education and training (Ministry of Communications and Transport, 2006; Haßler, Hennessy and Lubasi, 2011; Haßler, Hennessy and Lord, et al., 2011; Annie et al., 2015). For example, while the Ministry of Communications and Transport has developed the national ICT policy, no e-learning policies have being developed by the education sector and thus, it is difficult to establish suitable guidelines and standards for the development educational technology, teachers' Pedagogic Technological Content Knowledge as well as leaners' computer literacy (Haßler, Hennessy and Lubasi, 2011; Haßler, Hennessy and Lord, et al., 2011). The lack of these policies means the non-existence of teachers' and learners' ICT competency framework which is at the centre of ensuring technological changes in education and training (Haßler, Hennessy and Lord, et al., 2011). Although the national ICT policy indicates the various ICT infrastructure available, more emphasis is placed on the use of personal computers, mobile technologies, radios, televisions, CD-ROMs and DVDs (Ministry of Communications and Transport, 2006). The policy in question strongly emphasize the contribution of ICT on the national development and participation in the knowledge economy and more importantly the need to include disadvantaged groups especially located in rural areas (Ministry of Communications and Transport, 2006; Haßler, Hennessy and Lubasi, 2011; Haßler, Hennessy and Lord, et al., 2011; Annie et al., 2015). However, the policy is written in English only and not in any of the local languages and that makes it difficult for those who cannot speak or write the language to make contributions towards the planning of e-learning in order to meet their needs and culture (Haßler, Hennessy and Lubasi, 2011). Overall, to realise the benefits of e-learning investments, appropriate planning approaches and governance models must be adopted as well as infrastructure, skills and culture that reflects both teachers' and learners' needs.

In practice, teachers' integration of e-learning with conventional didactics in Kenya is not as yet realised in the classrooms (Onderi et al., 2013; Nyagowa et al., 2014). The inability of teachers adopt blended

learning is the results of their lack of Technological Pedagogical Content Knowledge and limited ICT resources (Onderi et al., 2013; Nyagowa et al., 2014) which are some of the necessary and sufficient condition for the success of this kind of transformation. Although teachers were trained to use ICT for teaching and learning purposes, they still fail to use the technology to integrate e-learning into the existing curriculum (Onderi et al., 2013; Nyagowa et al., 2014). Therefore, to successfully implement blended learning availability and accessibility of infrastructure as well as teachers' Technological Pedagogical Content Knowledge must first be developed. To improve teachers' and learners' training, fast Internet connectivity should be restored and those who initially did not benefit from previous training sessions should be given opportunities during school holidays. These initiatives hope to improve the level of e-learning adoption in Kenya by improving teaching methods and techniques and allowing its users more time to practice (Onderi et al., 2013; Nyagowa et al., 2014).

A study which was conducted in Johannesburg of South Africa wherein a total number of 117 teachers from twelve schools were conveniently sampled, explored teachers' attitudes towards educational technology (Hart and Laher, 2015). The findings of the study uncovered that the majority of teachers have access to ICT both at home and at school however, the technology is hardly used in classrooms (Hart and Laher, 2015). Therefore, access to the technology was not a sufficient condition for the implementation of blended learning in these schools. The study further assessed teachers' perceived usefulness of blended learning by using perceptions about the value of e-learning over conventional didactics, the integration of technology with face-to-face methods, and, the management of complexity as well as tangible results that comes with the transformations (Hart and Laher, 2015). As per the findings of this study, most teachers' perceptions on the usefulness of integrating e-learning with conventional didactics were high and this suggests that the prospects for adoption and implementation of technology at these schools is promising (Hart and Laher, 2015). However, focus needs to be on the "culture and social norms" of both teachers and learners in order to achieve effective and sustainable change brought by the implementation of blended learning in these South African schools. The low levels of e-culture and social norms with regard to ICT could be a major hindrance to the integration of e-learning and conventional didactics. Generally, South Africa is "putting the cart before the horse" in its implementation of the digital learning. The provision of Tablet to all the learners is desirable however, this should have been the final step in the adoption of e-learning. Although all the preconditions of blended learning are equally necessary, their order of priority determines the success of digital technologies in education. The country should have first focussed on providing teacher with training on how to integrate education ICT in their work and also encouraging the appropriate e-culture among users instead of prioritising infrastructure before any other thing. Across all countries, the slow pace of the adoption of blended learning reflects at the most, the inappropriateness of the planning approaches adopted by various countries across the four levels of development, limited infrastructure provided as well as lack of necessary skills and e-culture among teachers and learners.

Conclusion

This paper uncovered the various planning approaches adopted by countries with different HDI. Countries with very high and high HDI as well as those with medium and low HDI categorised as developed and developing have adopted the same planning approaches, respectively. Seemingly, the level of development which is measured by the determination of a number of elements inclusive of ICT infrastructure, among others influences the adoption of the appropriate planning approaches. South Africa's development leadership among developing countries seems to be misleading its adoption of planning approaches for blended pedagogies. Similarly, the country seems to be in competition with developed countries hence its adoption of the planning approaches. However, the question remains: To ensure effectiveness and maintain sustainability, is South Arica's planning of blended pedagogies in line with its infrastructure as well as teachers and learners' ICT skills and culture?

References

Annie, P., Ndhlovu, D. and Kasonde-Ng'andu, S. 2015. Establishing traditional teaching methods used and how they affected classroom participation and academic performance of learners with visual impairment in Zambia. *International Journal of Multidisciplinary Research and Development,* 2(3): 397-412.

Bakhshizadeh, H., Hosseinpour, M. and Pahlevanzadeh, F. 2011. Rural ICT interactive planning in Ardabil province: Sardabeh case study. *Procedia Computer Science*, 3: 254-259.

Button, D., Harrington, A. and Belan, I. 2014. E-learning and information communication technology (ICT) in nursing education: A review of the literature. *Nurse Education Today*, 34: 1311-1323.

Dale, R. 2004. *Development Planning: Concepts and Tools for Planners, Managers and Facilitators.* London: Zed Books.

Deng, Z., Lin, Y., Zhao, M. and Wanga, S. 2015. Collaborative planning in the new media age: The Dafo Temple controversy, China. *Cities*, 45: 41-50.

Department of Higher Education and Training (DHET). 2011. *Draft Policy Framework for the Provision of Distance Education in South African Universities*. Pretoria: DHET.

Department of Higher Education and Training (DHET). 2013. *White Paper for Post-School Education and Training*. Pretoria: Department of Higher Education and Training.

Department of Higher Education and Training (DHET). 2014. *Policy for the Provision of Distance Education in South Africa Universities in the Context of an Integrated Post-school system*. Pretoria: Department of Higher Education and Training.

Department of Education (DoE). 2004. *White Paper on e-Education*. Pretoria: Department of Education.

Department of Science and Technology. *Innovation Towards a Knowledge-Based Economy: Ten-Year Plan for South Africa (2008–2018)*. Pretoria: Department of Science and Technology.

Dolenc, K and Aberšek, B. 2015. TECH8 intelligent and adaptive e-learning system: Integration into Technology and Science classrooms in lower secondary schools. *Computers and Education*, 82: 354-365.

Drazkiewicz, A., Challies, E. and Newig, J. 2015. Public participation and local environmental planning: Testing factors influencing decision quality and implementation in four case studies from Germany. *Land Use Policy*, 46: 211-222.

Elbakidzea, M., Dawsonb, L., Anderssona, K., Axelssona, R., Angelstama, P., Stjernquistb, I., Teitelbaumc, S., Schlyterb, P. and Thellbrod, C. 2015. Is spatial planning a collaborative learning process? A case study from a rural–urban gradient in Sweden. *Land Use Policy*, 48: 270-285.

Faehnlea, M. and Tyrväinenb, L. 2013. A framework for evaluating and designing collaborative planning. *Land Use Policy*, 34: 332-341.

Farhoodi, R., Gharakhlou-N, M., Ghadami, M and Khah, M.P. 2009. A critique of the prevailing comprehensive urban planning paradigm in Iran: The need for strategic planning. *Planning Theory*, 8(4): 335-361.

Glušac, D., Makitan, V., Karuović, D., Radosav, D. and Milanov, D. 2015. Adolescents' informal computer usage and their expectations of ICT in teaching – case study: Serbia. *Computers and Education*, 81: 133-142.

Haßler, B., Hennessy, S. and Lubasi, B. 2011. Changing classroom practice using a school-based professional development approach to introducing digital resources in Zambia. *Itupale Online Journal of African Studies*, 3: 17-31.

Haßler, B., Hennessy, S., Lord, T., Cross, A., Jackson, A. and Simpson, M. 2011. *An Investigation of Appropriate New Technologies to Support Interactive Teaching in Zambian Schools (ANTSIT): Final Report to DfID.* Cambridge: Centre for Commonwealth Education.

Hadaya, P. and Cassivi, L. 2012. Joint collaborative planning as a governance mechanism to strengthen the chain of IT value co-creation. *Journal of Strategic Information Systems,* 21: 182-200.

Hart, S.A. and Laher, S. 2015. Perceived usefulness and culture as predictors of teachers attitudes towards educational technology in South Africa. *South African Journal of Education*, 35(4): 1-13.

Hossain, S., Scholz, W. and Baumgart, S. 2015. Translation of urban planning models: Planning principles, procedural elements and institutional settings. *Habitat International*, 48: 140-148.

Hwang, D.J., Yang, H-K. and Kim, H. 2010. *E-Learning in the Republic of Korea*. Moscow: UNESCO Institute for Information Technologies in Education.

Khlaisang, J. and Likhitdamrongkiat, M. 2015. E-learning system in blended learning environment to enhance cognitive skills for learners in higher education. *Procedia - Social and Behavioral Sciences*, 174: 759-767.

Kunitz, S. 2015. Scriptlines as emergent artifacts in collaborative group planning. *Journal of Pragmatics*, 76: 135-149.

Lee, Y.J. and Lee, D. 2015. Factors influencing learning satisfaction of migrant workers in Korea with e-learning-based occupational safety and health education. *Safety and Health at Work*, 6: 211-217.

Lee, S. and Kim, B.G. 2015. Users' preferential factors in Web-based e-learning systems for ease of workplace learning in Korea. *Learning and Individual Differences*, 39: 96-104.

Mandarano. L.A. 2008. Evaluating collaborative environmental planning outputs and outcomes: Restoring and protecting habitat and the New York–New Jersey Harbor Estuary Program. *Journal of Planning Education and Research*, 27:456-468.

Ministry of Communications and Transport. 2006. *Information and Communication Technology Policy*. Lusaka: Ministry of Communications and Transport.

Ministry of Education. 2010. *Draft National eLearning Strategic Plan*. Lusaka: Ministry of Education.

Ministry of Education, Science and Technology (MEST). 2009. *Major Policies and Plans for 2009.* Seoul: Ministry of Education, Science and Technology.

National Planning Commission (NPC). 2012. *National Development Plan 2030: Our Future-Make it Work*. Pretoria: Government Printers.

NEPAD E-Africa Commission. 2009. *NEPAD e-schools Initiative*. www.eafricacommission.org/projects/127/nepad-e-schools-initiative. (Accessed: January 15, 2016).

Ninlawan, G. 2015. Factors which affect teachers' professional development in teaching innovation and educational technology in the 21st century under the Bureau of Special education, Office of the Basic Education Commission. *Procedia: Social and Behavioral Sciences,* 197: 1732-1735.

Nyagowa, H.O., Ocholla, D.N. and Mutula, S.M. 2013. The influence of infrastructure, training, content and communication on the success of NEPAD'S pilot e-Schools in Kenya. *Information Development*, 30(3): 235-246.

Onderi, H., Ajowi, J. and Malala, G. 2013. Educational planning and practices in Kenya. *International Journal of Interdisciplinary Research and Innovations*, 1(1): 36-43.

Park, Y., Yu, JH. and Jo, I-H. 2016. Clustering blended learning courses by online behaviour data: A case study in a Korean higher education institute. *Internet and Higher Education,* 29: 1-11.

Park, J.H., Schallert, D.L., Sanders, A.J.Z., Williams, K.M., Seo, E., Yu, L., Vogler, J.S., Song, K. and Williamson, J.H. 2015. Does it matter if the teacher is there?: A teacher's contribution to emerging patterns of interactions in online classroom discussions*. Computers and Education,* 82: 315-328.

Pruet, P., Ang, C.S. and Farzin, D. 2016. Understanding tablet computer usage among primary school students in underdeveloped areas: Students' technology experience, learning styles and attitudes. *Computers in Human Behavior*, 55: 1131-1144.

Roy, P. 2015. Collaborative planning – A neoliberal strategy? A study of the Atlanta BeltLine. *Cities*, 43: 59-68.

Saekow, A. and Samson, D. 2011. E-learning readiness of Thailand's Universities comparing to the USA's cases. *International Journal of e-Education, e-Business, e-Management and e-Learning*, 1(2): 126-131.

Skryabin, M., Zhang, J., Liu, L. and Zhang, D. 2015. How the ICT development level and usage influence student achievement in reading, mathematics, and science.*Computers and Education*, 85: 49-58.

Talpur, M.A.H., Napiah, M., Chandio. I.A., Qureshi, T.A. and Khahro, S.H. 2014. Development of a regional transport policy support system for rural planning agencies in developing world. *Procedia Engineering*, 77: 2-10.

Theron, F. 2008. The change agent-project beneficiary partnership in development planning: theoretical perspectives. In Theron, F. (ed) *The Development Change Agent: A Micro-level Approach to Development*. Pretoria: Van Schaick.

Tsheola, J.P. 2011. A case for teaching development planning within development studies. *Africanus*, 41(3): 80-94.

Valtonen, T.,Kukkonen, J., Kontkanen, S., Sormunen, K., Dillon, P. and Sointu, E. 2015. The impact of authentic learning experiences with ICT on pre-service teachers' intentions to use ICT for teaching and learning. *Computers and Education*, 81: 49-58.

Webster, T.E. and Son, J.B. 2015. Doing what works: A grounded theory case study of technology use by teachers of English at a Korean university. *Computers and Education*, 80: 84-94.

Wolff, M.,Wagner, M.J., Poznanski, S.,Schiller, J. and Santen, S. 2015. Not another boring lecture: Engaging learners with active learning techniques.*The Journal of Emergency Medicine*, 48: 85-93.

Yoo, S.J., Han, S. and Huang, W. 2012. The roles of intrinsic motivators and extrinsic motivators in promoting e-learning in the workplace: A case from South Korea. *Computers in Human Behavior*, 28: 942-950.