

Online distance learning as a public policy tool for development

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Abstract

Achievements in technology and information systems have been used extensively in public services. Yet, in many countries, higher education because of its independence often remains neglected by e-government policies in more centralised sectors such as taxation, procurement, business registration, licensing or even health, regardless of its purpose towards future generations or the resources often spent therein.

The purpose of this paper is to argue that information and communication technologies are important not only for educational institutions, teachers and learners, but also for policy makers of education for development. Potentially, there are some unexploited benefits of online distance learning on which certain political actors can capitalize. This reflexive study intends to discuss how online distance learning can be integrated into public policies for better access to education, and implemented in practice in a developing country's context.

The findings suggest three online distance learning elements that can radically change education policies and needs to be considered together: 1) Virtual Learning Systems and Environments, 2) Mobile Communication Devices, and 3) Internet Access and Literacy. These areas are relevant not only in transition economies and developing countries, but in general. The analysis moves from education management systems such as Moodle and Coursera to human capital, technological infrastructure and access. The original contribution of this study is a holistic approach to online distance learning as a public policy tool for development on a national and regional level, beyond specific courses, and institutions.

Introduction and research problem

Distance learning started a long time ago, primarily to fulfil the educational needs of expats and their families abroad. At that time learning materials were sent by mail or curriers. Online distance learning emerged relatively recently, thanks to the Internet and other structural changes in education (Simonson et al. 2000, Moore, Anderson 2012). This new decentralised medium of communication radically changed how learning content was distributed. More importantly, it eliminated the distance barrier between the educator and the learner who could now engage with each other online in real time. Surprisingly, although the number of online distance courses and students have increases over the years (Howell, Williams & Lindsay 2003, Moore, Kearsley 2011), national education policies have generally failed to reflect this trend.

This study will focus specifically on online distance learning policies for development. The unit of analysis will be six Western Balkan countries that share a similar communist past, but also a common inspiration to join the European Union (EU). The selection of Albania, Bosnia and Herzegovina, Croatia, Former Yugoslav Republic of Macedonia, Montenegro, and Serbia is intentional because they are considered to represent transition economies (UNCTAD 2011) or developing countries. Kosovo is also a Western Balkan country, but because the country is quite new, there are not sufficient data about it to be fully included in this study.

Development and political transformations in Western Balkans have often been a mirror of each other. Focusing on a narrow area of study such as online distance learning and related policies and trends is challenging for this study because of the changing environment in these countries. However, there is an important contribution to be made for researchers and education policy-makers alike in this direction.

The paper identifies and reflects on three main areas related to online distance learning policies for development:

- **Virtual learning environments**, including education management systems, are the first. Their level of sophistication has a great impact on the learning process and administration by individual or institutional users. These platforms can be divided in three groups: 1. Open source such as Moodle; 2. Proprietary such as Blackboard; or 3. Web-cloud based such as Coursera. Although the purpose of this study is not to

analyse these categories in detail, the analysis will present some critical reflections on their impact on online distance learning policies for development.

- **Mobile communication devices** and their use in education are the second area to be discussed in this study. Research evidence shows an increase in the number of mobile phones and apps in general (Shin, Hong & Dey 2012), but also specifically for education and development (Valk, Rashid & Elder 2010). Mobile devices such as mobile phones or tablets are being used more to perform some of the tasks previously done on PCs and laptops, regardless of the development context. More 'mobile' lifestyles are being reflected also on online distance learning in the context of accessing learning materials or interacting more with learners and educators on the go.
- **Internet access and literacy** is the third element of high relevance in online distance learning policies for development discussed in this study. Wireless connections are specifically discussed here because of their user-friendliness with mobile devices mentioned earlier.

The aim of this study is to start with a general world view on these three trend-areas, but then focus specifically on online distance learning policies for development, taking as an example the six Western Balkan developing countries. The objective is to analyse and present how education policies could account better for the opportunities and challenges of online distance learning on a national and global context.

To meet its aim this paper is structured as follows: First, trends, opportunities and challenges in online distance learning reflected in the research literature or a number of international policy documents and reports are analysed. Then the discussion follows with a more detailed introduction of the Western Balkan context and background. The following section introduces the research methodology and approach. The findings and discussion will focus specifically on two policy alternatives identified and presented as an outcome of the analysis in this study. Finally the conclusions summarize the key points and present some directions for future research.

Trends and opportunities in online distance learning for development

The proliferation of online distance learning courses is often explained as a response to increasing pressure on universities to control their costs and rising tuition fees (Rovai,

Downey 2010). Yet, from a developing country's perspective online distance learning policies can have a positive impact on more important social and economic issues such as development through cutting edge learning content and easier integration in a multicultural world.

Online distance learning is often associated with virtual learning environments and education management systems. To use them a certain level of IT self-efficacy is assumed, although often resulting to a lower satisfaction with the learning process (Piccoli, Ahmad & Ives 2001). Three key elements seem to influence the quality of the virtual learning environments: The design of the system, the level of interaction with instructors, and the active peer-to-peer discussions among students (Swan 2001). The use of new technologies appears to be successful when not only the collaborative online learning environment is considered carefully, but also the learning context (Bernard, de Rubalcava 2000). This can become more evident with large groups of individual students from different countries and regions having to follow the same online distance learning programme.

Most online courses are offered by universities in developed Western countries and the same holds true also for many Learning Management Systems (Kats 2013). Most of these systems such as Moodle or Blackboard for example bear certain embedded values from these developed countries with a long tradition in education (Godwin-Jones 2012). Countries such as United States of America and United Kingdom on the other hand continue to 'export' most of the online learning content.

Massive Open Online Courses (MOOCs) on the other hand, started by Stanford University and delivered through Coursera reflect a similar trend of Western domination in with their students being proportionally in great part from USA (Coursera 2012). Students from developing countries might find their content and reputation very important, but their design and mode of delivery challenging. There is little research in this direction; therefore the main purpose of this study is to reflect on education policies in developing countries that could make online distance learning programmes more useful for those societies.

Reflecting on MOOCs, they could radically change education by providing the right environment for the flipped classroom (Martin 2012) where collectivist learning (Kop 2011) happens more among students themselves than it comes from the teacher. MOOCs as new web-based learning tools gave new meanings to concepts like lifelong learning and personal knowledge management. Their level of open access and the collaborative learning nature of

virtual learning environments in general have attracted most of educators' attention lately. However, there are a number of structural barriers that need to be addressed by education policies in a developing context in order to make better use of their potential.

Two elements are indispensable for online distance learning: web communication devices and internet access. Starting with the fist, the major challenges can be grouped in socio-economic and technological (Sife, Lwoga & Sanga 2007). EdStats, the World Bank database of statistical figures on education (World Bank 2013), lists a number of projects from this organisation on e-learning materials, education management information systems, equipment and computer labs, internet connectivity and the use of media in open and distance learning in developing countries. Yet, the biggest challenge is not technology, but more the absence of socio-technical systems with all their elements in place that are able to absorb online distance learning for development.

While portable and wireless technologies have become indeed common in many countries, another challenge is to enable learners to learn whenever they are curious, switch between formal, informal, individual and social learning dimensions (Looi et al. 2010). For this, policy coordination should look beyond traditional learning for an educated society. To discuss this in more detail the following section will introduce the Western Balkan as the developing region on which this research is focused.

Research background: The Western Balkan as a developing region

Western Balkan countries share a common communist past until the beginning of 90s, and a common present aspiration to join the European Union. These countries usually refer to Albania, Bosnia and Herzegovina, Croatia, Former Yugoslav Republic of Macedonia (FYROM), Kosovo, Montenegro, and Serbia. The following diagram presenting the GDP growth in percentage shows some of the similarities and interdependencies between these developing countries:

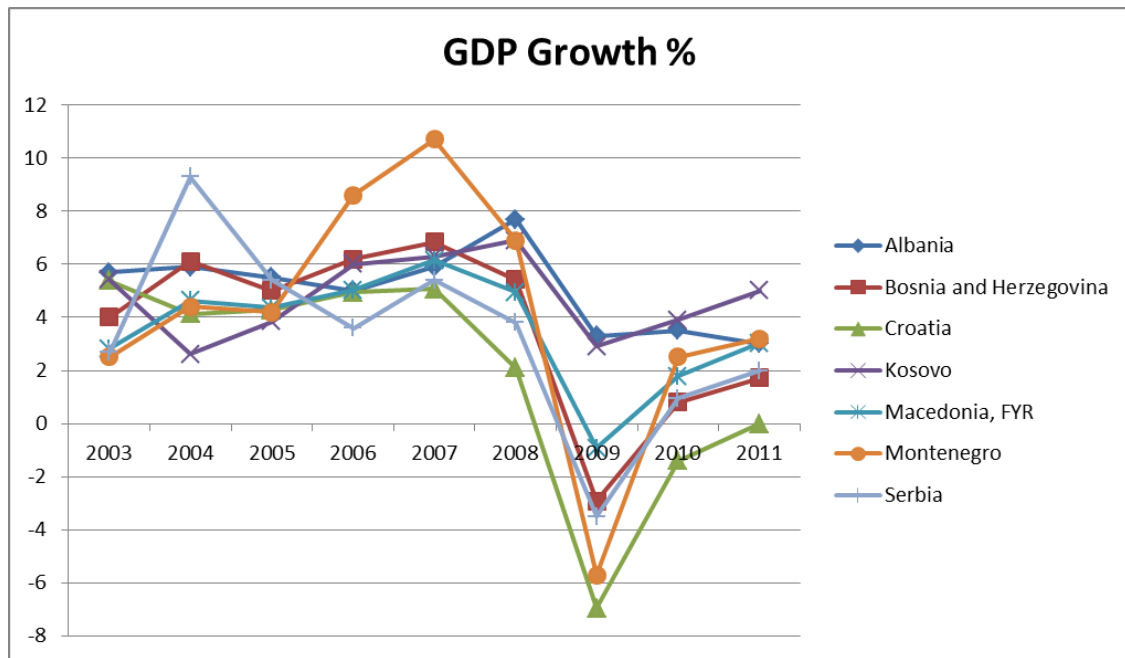


Figure 1: GDP Growth in Western Balkans. Source: The World Bank (2012b)

It is clear from this diagram that all countries, maybe except Albania, were negatively influenced by the global economic crisis in 2008-2009 as the rest of Europe, but are showing positives signs of recovery afterwards. It is important to note that the most developed country in the region that is joining EU in January 2014, Croatia, shows one of the lowest GDP growths in the last years compared to the other ones that continue to show signs of transition. Growing imbalances and uneven development between Eastern and Western Europe was exposed by the global crisis, with eastern economies suffering the most (Rae 2011). This study will discuss the impact of such differences on education and the policy alternatives for online distance learning in the Western Balkan region in response to this situation.

One of the accession conditions EU is enforcing on the Western Balkan region is an inclusive (Pantic, Closs & Ivošević 2011) and unbiased (Delević 2007) education system, referring to the issues with refugees, minorities and displaced persons. However, social cohesion and inclusiveness for migrant students is a problem EU itself is struggling with, regardless of its 30 policy documents on intercultural education in Europe (Faas, Hajisoteriou & Angelides 2013). Under the veil of ‘journey’ rather than the outcome of accession, this is a reflection of the EU’s political conditionality towards the Western Balkan region (Anastasakis 2008). Some of the requirements to the aspiring candidate countries are not met by many southern member states, such as for example the public debt as a percentage of GDP which is way above the 60% EU policy limit in Italy (110.8% in 2011) or Greece (106.5 in 2011) (World

Bank 2012a). Nevertheless, the real challenge in Western Balkans remains the partial or inconsistent alignment of domestic and EU plans by the ruling elites on legal reforms (Noutcheva, Aydin-Düzgit 2012) and general policies including education.

Brain drain has been another major problem in the Western countries (Bartlett 2013, Trenchov 2012, Harms, Wdowiak & Schwarz 2010) as in many other developing regions. Online distance learning provides a reasonable solution to this problem, allowing many students to study for world-recognised degrees at their home countries while working and contributing to their national economies. Online distance learning can operate beyond accession conditions, policies, national border, and emigration rules for students from all over the world (Hogan 2012). Designing policies to support and accommodate such online distance education in top EU and world universities might have a positive impact towards intercultural cohesion and political accession in the EU. The following section presenting the methodology of this study will show how the trends analysed here could inform research and online distance learning policies for development.

A research methodology for online distance learning policies

This is an exploratory study on the use of information and communication technologies for education in a developing context, and their possible implications for policy-making. The research is based on secondary data from learning management system providers, international reports on the use of information technologies, and country-specific policy documents on e-education. Although some of this information is quantitative, this remains a qualitative study. Its purpose follows an increasing trend to bridge research and policy for international development (Maxwell, Stone 2013) through a holistic methodological approach. The following paragraphs will expand on the methodological approach and how the data is linked to the research question.

The analysis starts with a review of country-specific data from the most widely used open source learning management: Moodle, and from the web-cloud virtual learning environment: Coursera. The reason for selecting these two is that Moodle is an open sources system compared to Blackboard which is a proprietary one. The former can be used and modified freely in developing countries, assuming that there is sufficient technical expertise to install, adapt and maintain. What is more important for this study, on its main website Moodle provides information about the registered institutional users in each country, including those

of the Western Balkan, while nothing could be found from Blackboard on them. On the other hand Coursera is a new cloud-based virtual learning environment where students can register for free to access learning content from top universities. Being the recognised delivery channel of MOOCs, Coursera is important for discussing access to free education for development and study how developing countries access and use it.

The United Nations E-Government Survey (UNDESA 2012) is selected as the international policy document to link information and communication technologies to governance policies in this study. The document is produced by the UN Department of Economic and Social Affairs (UNDESA) and ranks the countries according to the E-Government Development Index (EGDI). In this study e-government development is considered as linked to e-education. The report does not make any direct link to online distance learning, but the discussion in this could make an original contribution in this direction.

Finally, a number of education policy documents such as government programmes, national policies and party programmes are reviewed for the Western Balkan countries. Although there is little or no reference to online distance learning policies in any of them, the analysis in this study tries to identify some areas for future development and research. The following section will provide a detailed analysis of comparative data and findings in this context.

Findings and analysis: From technical developments to policy alternatives

Looking at the data from Moodle statistics (Moodle 2013a) and figures on registered sites by country (Moodle 2013b) there is a gap between large or developed, and developing countries. Moodle is one of the most common and open source learning management systems for virtual learning environments. Based on the same source, the following diagram gives a picture of Moodle institutional users in the top six countries, compared to six Western Balkan countries. Kosovo is not included in this table because Moodle had no data published about it.

Top Countries	Moodle Registrations	West Balkans	Moodle Registrations
United States of America	12,732	Albania	18
Spain	6,503	Bosnia and	62

		Herzegovina	
Brazil	5,419	Croatia	138
United Kingdom	4,105	FYR of Macedonia	38
Mexico	3,136	Montenegro	9
Germany	3,096	Serbia	210

Table 1: Moodle institutional registrations: A cross-country comparison

Some could argue that these numbers are relative to the size of the countries, more than to their level of economic development. This is generally true comparing Spain to Brazil for example, especially in the case of blended face-to-face and virtual learning programmes. However, on the other hand, Moodle could potentially be used for entirely online distance learning programmes too.

A better example of the differences between developed and developing countries on using virtual learning environments is Coursera. The MOOCs delivered through it are entirely online and the students should be expected to follow a distribution relative to the population of their countries. However, the picture in reality looks different: In August 2012 when Coursera reached 1 million students from 196 countries, 38.5% of them were from USA, and only 5.9% from Brazil, 5.2% from India, and 4.1% from China (Coursera 2012). The reason for this is that Coursera started at Stanford University and its courses are more recognised there.

Nevertheless, it is possible to argue that there are also development factors that influence the use of online management systems or virtual learning environments in higher education. The United Nations Department of Economic and Social Affairs proposes the E-Government Development Index (UNDESA 2012) mentioned earlier. In this study is considered also as an indicator of e-education. EGDI is a composed of three indicators of equal weight: Online Service referring to websites and services in the country, Telecommunication Infrastructure referring to the availability of computing devices and internet, and Human Capital referring to the qualification and education of people. Looking at the index and these indicators for the Western Balkan countries, the situation looks as follows:

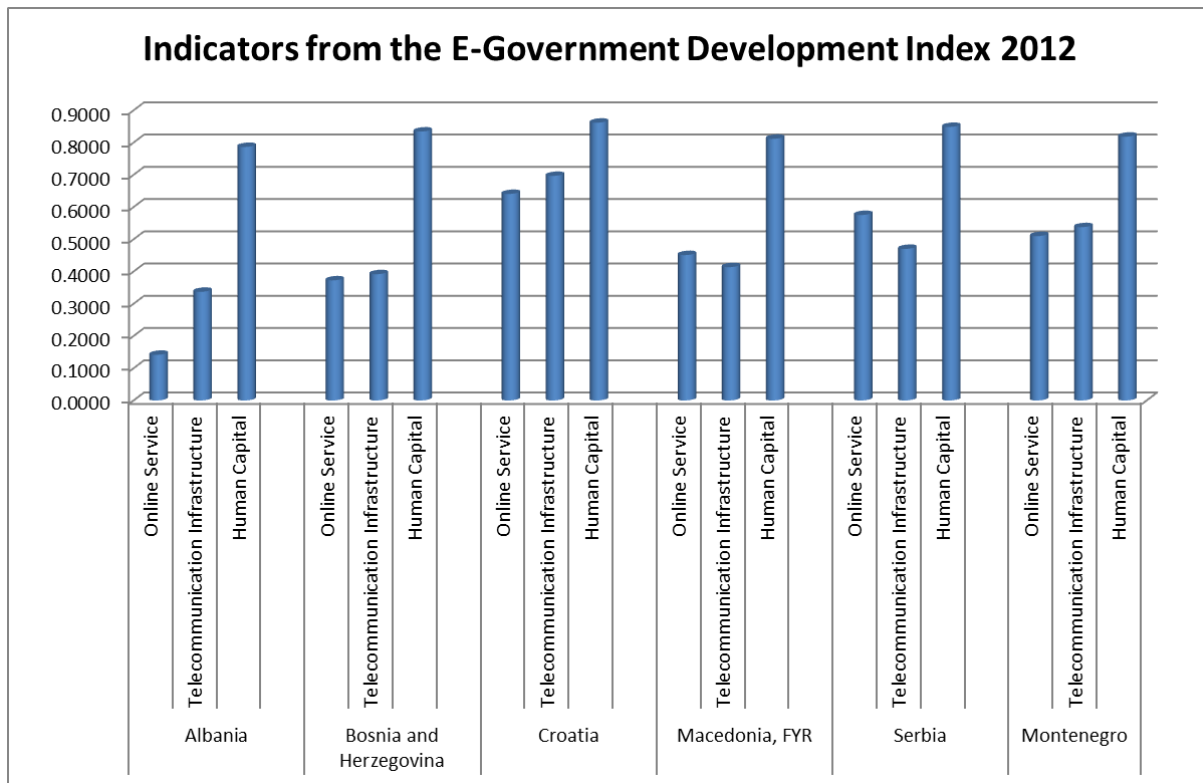


Figure 2: E-Government in Western Balkans - Source: UNDESA (2012)

This diagram shows that Western Balkan countries have a high level of human capital, but what is missing is the telecommunication infrastructure and as a consequence, online services. While traditionally education has been more often related to only human capital, the increasing use of information technologies and the barriers seen here could limit its development, delivery and absorption. The problem is clearly a complex one and the policy discourse should take into consideration not only the human element and learning content, but also the channels through which it can be delivered. In most Western Balkan countries this system view is still missing. There are rarely any holistic policies that integrate information and communication technologies into the learning process beyond initiatives for providing computers and internet connections to schools. The desirable online distance learning policies should take a rounded approach to include also the needs of the society, the opportunities to absorb them, or develop them locally.

Online distance learning presents a new paradigm where learning content is often developed constructively from students interacting with each other as research mentioned in the literature review has shown earlier. This model of flipped classroom does not fit within the traditional models of higher education, not only in developing counties, but also in developed ones. An alternative view of online distance learning policies could look as follows:

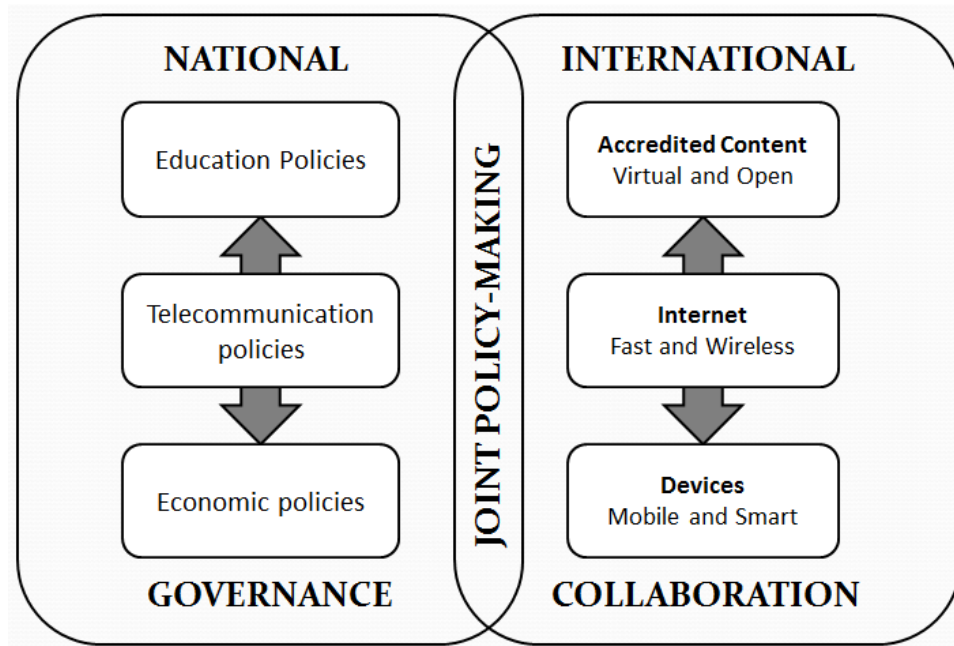


Figure 3: An alternative view of online distance learning policies

Traditionally education policies, telecommunication policies and economic policies have been separate, with designated ministries responsible for each of them. This is the case for all Western Balkan countries. However, because of its international and collaborative nature, online distance learning requires a coordination of policies in these three areas. This should provide more accredited content, internet access and the possibility to afford communication devices for online distance learning.

Policies supporting online distance learning programmes present also a number of challenges. Wright (2009) for example lists a sound rationale and vision, recognition of the limits of technology, the lack of telecommunication infrastructure and related cost, the adaptation of course materials from Western countries, limited resources, quality assurance systems, and mobile learning as some of them.

The accreditation of online degrees is another key problematic issue (Eaton 2001), also related to the policy discourses. This, however, is relative when taking a system view towards the broader role of online learning as a convenient way to access education on the emancipation of societies. Having this goal in mind rather than trying to fit online distance learning into old models of traditional classroom, policy makers need to rethink education strategies in this direction. In most countries education is coordinated by central government ministries. Although most universities are self-governed as higher education institutions

compared to lower levels of education, in the traditional model they follow top-down national policy and organisational hierarchies.

In terms of long-term education policies a major challenge is the possible marginalisation of local tutors and educators in the process of self-learning online. To minimize this risk one of the possible solutions is the integration and blending of online distance learning programmes into local curricula. Local universities could thus provide dual degree programmes, one for their traditional course and one for the online programme without the students having to follow both separately. These challenges however cannot be faced without a holistic policy approach to online distance learning for development.

Conclusions and future directions

The goal of this study was to bridge the gap between online distance learning infrastructure and education policies for development. First the context of developing countries and the possible drivers and barriers for online distance learning as a changing paradigm and in practical terms were analysed. The case studies analysed here were six Western Balkan countries, sharing a similar communist past, a common goal to join the European Union, and similar development paths during the last two decades.

The study framework proposed in this study translates data from learning management system providers and virtual learning environments into the international e-government and e-education policy debates. The findings and analysis could demonstrate that regardless of the increasing availability of many online learning courses, their potential is not being exploited sufficiently in developing countries.

The methodology and research was based on a critical review of secondary policy documents, reports and publically available information on the selected countries. However, conclusions on a local lever for each country have to be examined for each of them separately. This research, based on the evidence from the Western Balkan region, identified that there is not much work on online distance learning policies for development to be studied. The methodology had to account for the absence of this research evidence to translate specific developments on online distance learning systems into international and national policy contexts. This could be of interest for researchers, but also for international and national education policy-makers.

Certainly this study does not attempt to propose a 'one size fits all' solution. Many reports from international organizations, including the United Nations E-Government Survey discussed used here, have received some criticism for this (Bannister 2007). Instead, this study suggests that policy-makers in developing countries need to consider more technological innovations available for e-learning and development, designing policies that are consistent with international trends and their local contexts.

This study identified the positive impact online distance learning can have on reducing brain drain from developing countries. However, there is little research in this direction. Future studies could also provide a comparative analysis between the students who studied in local institutions, those who went abroad to attend full-time programmes in developed countries, and those who followed online distance learning degrees possibly while working in their developing countries. The contribution of this study would be to provide a complete comparative view of the impact of different education delivery systems for development.

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