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Cloud-Based Knowledge and Glocal Dilemmas in Higher Education

Abstract

The potential of cloud computing systems as a support tool for novel and meaningful knowledge creation, storage, and distribution within the context of higher education is recognised and so is the impact to which the global dimension imposes inherent ethical issues and social impacts within local contexts (glocality). Hitherto, mainstream literature debates on ethical issues like equity or cultural sensitivity, disregarding existent social dilemmas related to organizational innovation. This paper aims to promote a philosophical and empirical argument within contextual determinants; therefore, it reflects upon the key ethical issues and social dilemmas that cloud-based systems pose to distributed knowledge systems in the dialectic process of higher education diversity (global versus local). In this regard, an e-University strategic implementation framework interacting with ethics and culture (developed by the first co-author) will help two research objectives: to understand current e-learning practices in higher education and to suggest potential future guidelines for the dialectical process between the global and local.

K e y w o r d s: cloud, knowledge, glocal, higher education

Despite considering "ICT, education and development as separate pillars required to support knowledge society" (GeSCI, 2011, p. 7), the truth is that overlaps exist between those pillars. Therefore, higher education does not merely promote technological innovation, but also exploits it. However, the emphasis must be on knowledge production, management, and distribution through cloud platforms. But knowledge is specific to time, place, sequence, timing, position, and relationships within communities' contextualization. Furthermore, it follows that knowledge cannot be abstracted from context (physical or social), which includes a trade-off between global and local knowledge.

Education is inevitably expressed within local dimensions and the global region (European Bologna Process). The main educational issues in any region are: cultural diversity, ethics and values, mobility, intercultural communication, organisational cooperation, economical value, and government's education policy (Silva, Alvarez, & Rogerson, 2011). However, it is interesting that characteristic dialog concerning global and local dimensions in higher education focuses primarily on learner's diversity in various educational settings.

The globalised higher educational contexts threaten diversity, and the emergent technology of cloud computing will likely emphasise glocal dilemmas in educational knowledge. This novel infrastructure speeds up the adoption of various innovations adoption in academia (Ercan, 2010; Praveena & Betsy, 2009; Aymerich, Fenu, & Surcis, 2008). Collaborative learning, and e-learning, as much are enhanced by a knowledge grid (Liao et al., 2014), independent of time, space, and location (Laeep & Shaikh, 2016). For each of these dimensions, organisational dilemmas (localisation, collaboration, etc.) should be considered associated with strategy and policy, namely, to ensure equity and access to education. Consequently, several dilemmas need a closer look that should highlight differences across institutions and countries, and, furthermore, help to shed light on new issues that may be of special relevance for knowledge creation and management.

In addition, for the e-University, as a self-container of global e-learning programmes in higher education, knowledge is accessible from any location with (traditional university) or without a single physical campus (virtual university), representing not only a technical (interoperable learning or managerial functionalities), but also strategic decision (flexible and competitive), the focus of which is quality (excellence) and culture change (collaboration and sharing in an equitable virtual community).

The empirical evidence emerged within Lusíada universities' context since the e-university project was implemented. Despite the organisational strategic interest, its development outlines remarkably diverse intermediate results which this research project grasps through a comparative cross-national environment. Those empirical results seem to prove that a purely technological perception of educa-

tion condemns any cloud-based knowledge paradigm because "glocality" imposes several dilemmas that require analysis of the implementation process.

Knowledge in Education

Knowledge structure in academic organisations has changed over time, reflecting normative perceptions concerning its significance or educational conception (Silva, Alvarez, & Rogerson, 2011).

It is interesting to acknowledge that the literature on this subject suggests the concept of pedagogic content knowledge (Koppelman, 2008). A further perspective needs to recognise potential knowledge lockers (barriers to knowledge management) in their inherent phases of capturing, sharing and application (Okah, Teye, & Shoniregun, 2011). In order to identify, capture, store, preserve, and disseminate knowledge, higher educational organisations have incorporated technological systems to promote continuous feedback and adjustment to their knowledge strategy (Handzic & Hasan, 2003). Nonetheless, e-learning is converted into distributed learning, or in cloud-based knowledge (Chikhi & Abed, 2017), meaning that course components are distributed across multiple media, as well as exhibits a tendency for a student-centred learning approach and evokes a collective contribution (Mason & Rennie, 2008). Summing up, the e-learning paradigm allows the flourishing of knowledge communities, as well as providing free and unfettered access to information. This process denotes novel bottom-up structures of knowledge since traditional learning relationships (lecturers talking in classrooms) are replaced by knowledge projects structured as "content management environments" (Singh & Sandhu, 2006, p. 74).

According to Silva, Alvarez, and Rogerson (2011), knowledge engages on two different platforms:

- Learning Knowledge Management Systems (LKMS) – LMS evolution due to social interaction, which entails Personal Learning Environments (PLEs) and Social Software (SS);
- Learning Oriented KM Systems (LOKMS) – LMS evolution at an instructional level.

These systems characterise a range of strategies and practices used within institutions to identify, create, represent, distribute, and enable adoption of perceptions and experiences (i.e. Knowledge Management), whereas the novel technology of cloud computing refers to online services, applications, and data storage (Rawtani, 2012).

To Siddiqui et al. (2019), e-learning attracts more and more users and can improve the knowledge of learners anywhere anytime. The advent of cloud-based authoring tools is a relatively effective emerging trend that enables course editing and proofreading with a context-aware help engine. Therefore, a collaborative learning cloud cannot function smoothly without the support of knowledge modelling, knowledge discovery, and reasoning techniques (Liao et al., 2014).

Glocality

According to Meyrowitz (2005), glocality acknowledges a convergence between two concepts: *global* and *local*. Gordon (2009) claims that local information access is no longer restricted to geographic location due to the network configuration or distributed fluxes of information, in spite of the undefeatable cultural barriers that glocality imposes. Therefore, "glocal morality" is a fusion between global and local identities, where diversity shapes the relationship between local and global (Poster, 2005). World culture does not present itself as uniform, but can be rather described as "organised diversity", i.e., a web of various local cultures "glocalities" (which are not necessarily anchored in any geographical territory) (Silva, Alvarez, & Rogerson, 2011).

Special attention should be directed towards systems and services through personalised web-based interfaces, which facilitate and encourage collaboration, team participation, and consensus, knowledge sharing, and thus the promotion of academic excellence. In clouds, personalization of e-learning systems is enhanced (Ghallabi et al., 2020).

The existing and essential role that universities have in the social context (Altbach, 2008) is reinforced by glocality in order to promote sustainability and intercultural dialogue. The ICT for expanding cross-cultural experiences enables proactive communication between universities and stakeholders, namely students. These parties need to know more about global, societal, and local structures that create or prevent equity and justice among students of various cultures to reduce stereotypes and detriments (Räsänen, 2000).

Thus, a primary goal in global education is to guarantee respectful interactions among people from different nationalities and cultures in order to reinforce the transnational, economic, political, and social forces that have effectively enforced a glocal culture (respect for national boundaries) (Landorf, Roco, & Nevin, 2007).

Furthermore, other technological factors can affect the global use of e-learning. Particular importance of this assumption assumes management systems, namely

because the e-learning evolution involves four general categories of technological systems: Learning Management Systems (support administrative tasks) (Lassila & Poyry, 2007); Managed Learning Environment (including the whole range of information systems and processes which contribute directly or indirectly to learning and learning management) (Winter, 2006); Learning Content Management Systems (allowing developers to store, manage, and provide access to content used in e-learning) (Abazi-Bexheti, 2008); and Virtual Learning Environments (the components in which students and tutors participate in several online interactions, including online learning) (Weller, 2007). In addition, several dilemmas as to the application of a global open-source e-learning solution can emerge (like Moodle), or when it comes to the analysis of concurrent vendor proposals (global services and protocols, or local suppliers). In other words, Star and Ruhleder (1996) point out that "an infrastructure occurs when the tension between local and global is resolved (…), used in a natural, ready-to-hand fashion" (p. 114). Finally, according to Dinevski and Pšunder (2007), e-learning includes not only a technological platform, but also content and interactivity (communications processes). It embraces learning models and pedagogy to be attended out of the "bottom layer" (see next sections), which usually involves the collaboration of specialists (instructional designers, content creators, knowledge management practitioners, tutors, etc.), as well as standard authoring tools.

Taking the above into consideration, it is not possible to provide a unique definition or understand what consensual components involve e-learning, and whether any change in one of these impacts on the implementation of the whole system. Therefore, it is important to shed some light on the main issues and acknowledge the dimensions of e-learning: technological infrastructure and services (bandwidth, networks, computers, and other electronic tools), knowledge and content management (knowledge distributed, content development, copyright, curriculum, pedagogy, etc.). To ensure the successful use of ICT in educational systems, UNESCO usually acknowledges several policy frameworks about: the strategic utilisation of ICT in schools; technological infrastructure; curriculum; pedagogy and content development; professional development; monitoring and supervision. These issues require further study due to the following:

- the global versus local perspective of e-learning: global learning environments reproduce ethical and social impacts regarding knowledge creation, storage, and distribution within higher education contexts (Silva, Alvarez, & Rogerson, 2011);
- digital divide: ICT produces more inequality, and if technology is a prerequisite for achieving high quality education, then policy makers and university leaders have to develop efficient strategies to overcome this problem;
- complexity: this is the most important feature of our society, as e-learning, culture, and ethics as "human constructs" are complex.

Cloud Computing

Concept

Cloud computing is one of the leading forces of digital communications, which refers to web collaboration, document sharing, content creation, data syncing, etc. It describes a variety of computing concepts due to massive computational interactions in real-time through a communications network (e.g., Internet). Cloud computing tools include, among others, Facebook, Google services or apps, Dropbox, iCloud, etc. that enable data sharing, collaborative work, cooperation, editable and publishable content anywhere, anytime, through any device, and by any person (Carroll, Kotzé, & Merwe, 2012; Limbu, 2012). In addition, cloud computing is independent from the space or location in which the computational resources needed matter (Floridi, 2009).

Cloud computing, as an emerging distributed technology, requires urgent research since its inherent development activities are expected to change the applications with socio-political consequences (Hall & Stahl, 2012). However, cloud computing may lead to a multinational worldview of data management in which local laws may be a barrier for this concept to take hold (Thibodeau, 2010). This dangerous assumption of Thibodeau is a manifesto of globalisation, which Ammirabile (2012) recognises. It is a form of globalisation frequently based on specialisation and cost reduction. Its gradual emersion in the global networked communities can lead to the reasoning that cloud-based pedagogy is insurmountable (Limbu, 2012). Therefore, this invisible web (cloud-based) comprises all the databases relevant to the dominant academia environment but, on the other hand, without the possibility of being searched by general internet search engines (including learners) (Lewandowski & Mayr, 2006).

Cloud-Based Knowledge

Users of cloud computing are offered a variety of services through pay per use and fee-based infrastructure with value added infrastructure (Arora & Sharma, 2013) because this innovative technology promises to deliver computing resources to different locations through globalised circulation networks (Hall & Stahl, 2012).

Cloud computing, web 2.0, and enterprise 2.0 have raised some novel challenges to Knowledge Management Systems (KMS) which overcome institutional boundaries, i.e., access to the newest and most relevant knowledge; however, hitherto, lacking of integration among KMS functions and the Internet (Antonova, Gourova, & Roumen, 2009). These novel dimensions for cooperation must be emphasised to knowledge workers since KMS future developments (architecture)

are expected to be more effective, user-oriented, and sharable (i.e., the removal of physical barriers) (Floridi, 2009). Thus, the foreseen benefits of cloud-based computing are: user key information and software that can be easily accessed (virtually anywhere through his/her computer, smartphone or tablet); and higher levels of productivity because individuals can instantly access the knowledge stored within the cloud. Furthermore, redundancy is another benefit from cloud computing (Rawtani, 2012).

The Bond with E-Learning

The introduction of cloud computing in educational systems acknowledges the purpose of increasing scalability, flexibility, and availability at the application level (Popel & Shyshkina, 2019), which should be faster, cost-effective, and efficient (Siddiqui et al., 2019). Therefore, the traditional e-learning networking model assessment denoted a possible cutting-edge solution regarding the infrastructure itself and potentially costs; that is, to migrate e-learning systems (corporate and non-corporate) to the cloud. In addition, it ensures resolution in time to execute developments, support, updates, and fixes (Bitar, 2017). This option allows educational organisations to be charged according to students' access to servers (Masud & Huang, 2012).

Two keen and free-of-charge cloud computing applications for education are: (i) Google Workspace for Education (Google Apps), a free online suite of tools that includes Gmail and Google Docs. While Gmail is suitable for checking personal e-mails, Google Docs serves to open documents, spreadsheets, or presentations; (ii) Microsoft's 365 cloud service (replaced Live@edu), which includes SkyDrive. Thanks to the use of the cloud computing approach, collaborative work on a document or dynamic improvements are possible through different contributions (Thomas, 2011). Likewise, enhancement of objectives such as availability, cost reduction, on demand, and self-service are also possible (Goyal & Krishnamurthi, 2019). However, cloud computing usage in higher education changes universities' structural organisation, as well as how the design and delivery of lectures and lessons occur (Hall & Stahl, 2012). In fact, cloud computing will likely influence education because it intensifies participatory and creative practices (distributed knowledge contributions versus a single local contribution) (Greenhow, Robelia, & Hughes, 2009; Katz, 2008).

Issues Raised by Educational Change

   Technical.
The evidence for a novel generation of e-learning systems supported by a cloud-based environment is real. These systems operate through a wide range of devices,

while storing data in the cloud recognises a novel educational paradigm (Masud & Huang, 2012). Cloud computing is widely recommended as an excellent alternative for educational institutions with lower financial resources to operate their core systems; it makes it possible to avoid expenditures on computers, network devices, and excessive licenses, as well as provides full access to global platforms (simplified scalability) (Ercan, 2010). The proposed e-learning cloud architecture can be divided into five different layers (Arora & Sharma, 2013): infrastructure, software resource, resource management, service, and application. A LMS based on cloud architecture generally presupposes a rental basis (financial gain), with the advantage to be a worldwide and ubiquitous accessible system hosted on servers (data centre) from a third party (e.g., a vendor) (Aleckson, 2012).

In spite of the potential (mostly unresolved) critical issues involving the deployment of cloud computing, it is considered a turbulent business driver. Besides, some other typical usages of cloud computing to academics are: personal workplaces, opportunities for ubiquitous computing, no need to pack up everything into a thumb drive or copy all content between computers, and high processing power (Thomas, 2011).

Pedagogical.

Cloud computing, as a global and cross-cultural communication medium, enables learners' cultural knowledge since these are required to develop novel multicultural understandings (Limbu, 2012). The lecturers' roles will not be replaced by e-learning; in fact, cloud computing reshapes and updates old methods through an array of novel concepts, technologies, and tools which provide new strategic directions for education. Lecturers will continue to play leading roles and participate in developing and making use of the e-learning cloud (Masud & Huang, 2012). The underlying reason for this assumption is that the cloud computing infrastructure accelerates and fosters the adoption of innovations within the academia (Aymerich, Fenu, & Surcis, 2008).

Cutting edge, Cloud Learning Environment systems (CLEs) extend Personal Learning Environments (PLEs) because all educational organisations truly own it (the cloud serves as a large, autonomous system). CLEs users are academics or learners who share similar privileges, including control, choice, and the sharing of content (Mikroyannidis, 2012; Malik, 2009). Clearly, academics are most interested in cloud potential for storage and sharing their intellectual work as digital content with other academic community members. Hence, a truly open, collaborative, and scholarly intellectual environment will be possible (research, dissemination, peer-review, critique, publish, and, further, the ability to build upon it) (Thomas, 2011).

Ethical and social.

In spite of the significant short- and long-term benefits that cloud computing will produce in a scholarly environment, some serious perils and ethical challenges exist to account for in this emerging technology (Brady, 2010). The increasing interest of policymakers and regulatory authorities in cloud computing is due to implications for security, privacy, and trust (Rand Europe, 2011) (for the opposing views see EDRI (2021) or Salter (2019)). It seems necessary to quote the following key remark: "The governance of emerging technologies, whose menace can merely be lessened, is critical to undertake advanced measures to protect the most security-sensitive information stored" (Rawtani, 2012, p. 361).

From an educational point of view, and acknowledging that cloud computing might provide unlimited resources for storage capacity and data process, universities will become a key element in future security systems (Nagenborg & Capuro, 2011). Also, in policy-driven interactions across clouds, the infrastructure will require adequate design in order to address several risks bounded to the perspectives of security and privacy (Winans & Brown, 2009). To Laeep and Shaikh (2016), privacy is improved in clouds.

Personal information will be available nowhere and everywhere; though the majority of privacy laws assume that data resides in one place (Deal Architect, 2008). So, a responsible management of personal data is a key issue to ensure trust in the adoption of cloud-based services and, thereby, to encourage users to explore them (Pearson, 2013).

Beyond information privacy, the cloud computing debate focuses on authentication and authorisation. Insofar, the literature acknowledges several types of identity federation and claims-based authentication to make transactions easier between service end points, as well as between intermediaries in the cloud (Chou, 2008). As Antonova, Gourova, and Roumen (2009) point out, the referred benefits of cloud computing, namely agility, adaptability, flexibility, cost saving, and interoperability face some important barriers (e.g., security, privacy) that can prevent their widespread implementation.

Lastly, cloud computing communities – known as Culture Clouds – are enabling tools for users' description and connection to different or 'foreign' cultural resources, which is a significant social dilemma. This aspect is important to consider, as it is very difficult to improve multicultural knowledge and mutual understanding in the trans-geographical knowledge of workers, academics, and learners (Pawlowski, 2008). Nevertheless, the geographical location of cloud computing service providers in developed countries and owned by large multinational groups may undermine this process due to information ownership (cultural and economic dominance). A trustworthy relationship is associated with the control

of user data and, probably, with establishing personal social interaction which the digital divide may also constrain (Wakunuma, Stahl, & Ikonen, 2011).

Concluding, global information and computing ethics is urgent (shared norms, values, and practices) to minimise these and other ethical and social quandaries.

Research Methodology

Selecting a methodology is a process worth taking time over, as it is vital to any research project since it determines the nature of findings. Mayan (2009) beautifully describes this process through the "armchair walkthrough", namely, in qualitative research: "qualitative researchers aim not to limit a phenomenon – make it neat, tidy, and comfortable – but to break it (...) so that a description of the phenomenon, in all of its contradictions, messiness, and depth, is (re)presented" (p. 11).

In consonance with the above, this research assumes a qualitative analysis to grasp and describe the social phenomena and cultural milieus in which people live. Through interpretive and critical tradition, the researchers understand socially constructed realities, as well as attempts to create conditions for emancipation.

Keeping the above in mind, and keeping in mind the research environment, four assumptions arise:

1. multiple case studies – Lusíada Universities intercontinental context and different organisations managing multiple campuses which enable a feasible comparison.
2. longitudinal approach – summarises a continuous correspondence between the researchers and participants (informal conversations and semi-structured interviews with focus groups), along with participant observation behaviour (lecturing and IT management – organisational roles). These data collection procedures have generated much empirical data (interviews, documents, jottings, etc.)
3. a holistic solution – the interaction between e-learning, global, and local knowledge exhibits a lot of complexity.
4. anonymity – taking care of the description of identity and relationship with participants to avoid easy confidentiality disclosures; care should be taken to avoid these where possible.

It is feasible to claim that the dominant aspect of the researchers' role moved from that of a participant-observer to a one which is more action-oriented. While critical reflexivity is crucial in empowering others to implement change, researchers aimed not only to improve their practice, but also to increase their understanding in the context of that practice. In this scenario, the researchers desired to use the

e-learning platforms to justify the innovative practices with which they engaged, and to reflect on their educational practice, as well as to improve the rationality of knowledge in the Lusíada University educational environment.

Empirical Evidence

Lusíada Universities are a unique organisational context since these encompass multiple universities in national and transnational locations through personal and cultural connections engaged in the responsibility of internationalising higher education. These universities share communalities like its trademark, the pedagogic project, and, more importantly, the e-learning project, while, diverging in topics such as location, organisational structure taxonomy, and the educational management process.

The trademark recognises an international cooperation agreement as a result of the privileged relationships between Portugal and its former African colonies, as well as a way to promote organisational innovation. The last milestone encompasses the development of technological solutions and shared curriculum (Silva, 2012). Lusíada contextual differences are: (i) campuses' location in Portugal (Lisbon, Oporto, and Famalicão), Angola (Luanda, Benguela, and Cabinda), Cape Verde (Praia), São Tome and Prince (São Tomé); (ii) while the university in Portugal acknowledges a non-profit private organisation (Minerva Foundation) founded in 1986, in Angola – as a profitable private organisation (Saber Angola Ltd.), which started in 2001. In Cape Verde, there is a non-formal foundation (Ramiro Alves Figueira) established in 2011 and São Tomé has an organisational model similar to Portugal (foundation – Atena) since 2008; (iii) a unified management model with an autonomous pedagogical model on each campus (Portugal and São Tomé), in contrast to an integrated model for management and education (Angola) (Silva, 2012). Note that, in Cape Verde, there is an ambiguous organisational structure that has prevented any curriculum actions.

These contextual differences are easily perceived in field work, as the following examples of cloud computing technologies demonstrate: (i) in Portugal, the old and existent agreement with Microsoft allowed the implementation of the Live@edu platform (later renamed Office 365). However, this strategic adoption was limited to Lisbon and Famalicão, while Oporto preferred to explore Google Apps, and Moodle platforms. The access to both options is always available as a result of infrastructure liability in Portugal, while in Angola, the continuous existing problems with internet connection and bandwidth led to autonomous solutions

like Dropbox; (ii) however, access problems refer not only to bandwidth liability, but also to speed. Unfortunately, this is a common problem in African countries; so, it is typical to report problems for instance in SSO (Single-Sign-On) synchronisation, content synchronisation, trust of passwords (external security), and unexpected software updates; (iii) some novel functionalities of cloud computing distract and frustrate users due to the lack of usability. For example, problems were reported for multiple accesses through SkyDrive and/or Office365. If a person accesses the FAQ (Frequently Asked Questions) on Microsoft's website, problems like the obligation for two accounts – one on Office 365 and a personal account on Microsoft, used to access SkyDrive content, Messenger, and Xbox/Zune configurations – an error occurs. Users must first access https://skydrive.live.com using the Microsoft personal account to access it upon the update of Live@edu; it is, however, possible, through http://office.microsoft.com/pt-pt/ to access *My Office* (documents location). Webmail access is another nightmare for users (http://mail.office365.com), as the first author's personal experiences denote. It is quite common to receive the message *working on it* when access time is extreme; sometimes sent e-mails appear in the draft folder; (iv) market pressure (cloud option compulsory) enables cost opportunity dilemmas since it cancels old contracts. The Adobe cloud plans are an evidence of this scenario.

Other than the dilemmas observed, there was a distinction between knowledge and content, with emphasis on the necessity of global content and local knowledge, for example on the labour market. On the other hand, in libraries, there is a sense of global knowledge and local repositories which respect local regulations on copyright. Most teachers try to comply with the programmes but sometimes, in the middle of classes, there is other content that is relevant for the students to know even if it is not part of the programme. There are authors recognized at a global level, but how do you connect this globalization to local needs of knowledge? It also happens that each teacher is hampered by national educational culture; for example, Angola has not yet established native authors for several different subjects. However, since students are familiarized with local core knowledge, some aspects of the educational process are unique to their own culture. Some international facets, however, stay universal. From the educational point of view, language is the main problem in knowledge transfer, both because of local dialects in Angola and the influence of Portuguese language variations in Angola (the Brazilian variation in particular). There are authors recognized worldwide and, therefore, the problem is how a teacher adapts this facet of globalization to local needs. There is insufficient clarification of the relationship between practical knowledge and scientific knowledge.

These dilemmas are even enhanced if e-learning is borderless, or if the emerging services of cloud computing technologies involve the renegotiation of conces-

sion contracts. Furthermore, diversity implies a continuous intercultural communication which globalisation has enhanced; this glocal dialogue produced "glocal moralities" (Silva, Alvarez, & Rogerson, 2011). But, unfortunately, many political and business leaders have based their decisions on international statistics for justifying global education on the nationalistic criterion (Heilman, 2009). Heilman also criticises the underlying claim that students cannot compete in the new world economy and asks whether "this appeal to national and personal self-interest [is] causing us to miss the opportunity to connect with people's hopes and values?" (p. 25).

Finally, as regards global platforms, recognized and used in the educational environment worldwide (e.g. Moodle and Microsoft Teams), they have different approaches to issues concerning user's privacy (Ślósarz, 2020), or do not always give opportunities for ubiquitous computing (e.g. countries with limited access to the Internet or where some services were blocked). The time of the pandemic has shown that e-learning is associated with the weakening of human ties (ELearning Inside, 2021) and collaborative edition of documents is considered a myth and advertising slogan (Zhao & Watterston, 2021).

Conclusion

The potential of cloud computing systems is being recognised as supportive to a new meaningful knowledge creation, storage, and distribution system within higher educational contexts (Ercan, 2010). These distributed knowledge networks indeed facilitate knowledge sharing; however, its globality imposes serious dilemmas for global challenges in education related to inequality and social justice. While it is important to contextualise differences between and within global cultures, local cultures can have ineliminable differences. There are educational authors that are recognized worldwide but the problem is how this globalization fits into local needs. There is insufficient clarification of the relationship between practical knowledge and scientific knowledge. Thus, higher educational institutions have a social responsibility to promote "glocal knowledge"; therefore, the authors believe that, ultimately, a deeper understanding of "glocal morality" is required. It is the authors' opinion that "glocal morality" implies a fusion of competences that permit ethical decisions within different cultural diasporas (glocal) (Silva, Alvarez, & Rogerson, 2011).

However, because of knowledge-sharing through various e-learning platforms, the use of collaborative and interactive tools (synchronous or asynchronous) allows

debate about the presentations, which entails a process of knowledge creation and transference. Knowledge and learning are usually collective activities; therefore, team participation and consensus should be valued just as much as, if not more than individual achievement. This scenario is further enhanced due to the tightening of copyright and other ownership restrictions through international treaties and regulations, which limit access to information sources. Yet, chronological data as regards the transfer of knowledge in higher educational institutions exhibits a wide array of mixed results.

As regards cloud-based knowledge, it is necessary to incorporate tools for knowledge creators to attend to linguistic and liability problems, as well as local students' skills. Finally, all knowledge creators have a moral responsibility to be ethical and culturally sensitive, even though dissimilar higher educational institutions may produce diverse yet inclusive and equitable learning environments.

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Nuno Silva, Isabel Alvarez

Wiedza oparta na technologiach w chmurze i glokalne dylematy w szkolnictwie wyższym

S t r e s z c z e n i e

We współczesnych czasach dostrzega się potencjał systemów przetwarzania w chmurze jako narzędzi wspierających tworzenie, przechowywanie i udostępnianie wiedzy w kontekście szkolnictwa wyższego, podobnie jak uwarunkowania oddziaływania wymiaru globalnego na nieodłączne kwestie etyczne i skutki społeczne w kontekście lokalnym (glokalność). Dotychczasowa literatura przedmiotu porusza kwestie etyczne, takie jak równość czy wrażliwość kulturowa, pomijając istniejące dylematy społeczne związane z innowacjami organizacyjnymi. Niniejszy artykuł ma na celu promowanie argumentacji filozoficznej i empirycznej w ramach uwarunkowań kontekstowych; odzwierciedla zatem kluczowe kwestie etyczne i społeczne, jakie systemy oparte na chmurze stawiają rozproszonym systemom wiedzy w dialektycznym procesie różnorodności szkolnictwa wyższego (perspektywa globalna kontra lokalna). Strategiczne ramy wdrażania e-uniwersytetu, postrzegane przez pryzmat interakcji z etyką i kulturą (opracowany przez pierwszego współautora), pomogą zatem zrealizować dwa cele badawcze: zrozumienie obecnej praktyki e-learningu w szkolnictwie wyższym oraz wskazanie możliwych przyszłych wytycznych co do dialektycznego procesu zachodzącego pomiędzy tym co globalne a tym co lokalne.

S ł o w a   k l u c z o w e: chmura, wiedza, glokalność, szkolnictwo wyższe

Нуно Силва, Изабель Альварес

Знания, основанные на облачных технологиях и глокальные дилеммы в высшем образовании

А н н о т а ц и я

Авторы утверждают, что можно признать потенциал систем облачных технологий в качестве вспомогательного инструмента для создания, хранения и распространения новых и значимых знаний в контексте высшего образования, и этот глобальный аспект обуславливает неотъемлемые этические вопросы и социальные последствия в локальных контекстах (глокальность). До сих пор в основной литературе обсуждались этические вопросы, такие как равенство или культурная чувствительность, и игнорировались существующие социальные дилеммы (связанные с организационными инновациями). Эта статья направлена на продвижение философских и эмпирических аргументов в контексте контекстуальных детерминант, обусловленных ключевыми этическими проблемами и социальными дилеммами, которые облачные системы ставят перед распределенными системами знаний в рамках диалектического процесса разнообразия высшего образования (глобального или местного). В этом отношении структура стратегической реализации электронного университета в контексте взаимодействия с этикой и культурой (разработанная первым соавтором), поможет про-

анализировать и понять текущую практику электронного обучения в высшем образовании, так и предложить потенциальные будущие основные принципы диалектического процесса между глобальным и локальным.

К л ю ч е в ы е с л о в а: облако, знания, глокальный, высшее образование

Nuno Silva, Isabel Alvarez

Conocimiento basado en la nube y dilemas glocales en la educación superior

R e s u m e n

Se reconoce el potencial de los sistemas de computación en la nube como herramienta de apoyo a la creación, almacenamiento y distribución de conocimientos novedosos y significativos en el contexto de la educación superior donde la dimensión global impone cuestiones éticas inherentes e impactos sociales dentro de los contextos locales (glocalidad). Hasta ahora, la literatura principal debate cuestiones éticas como la equidad o la sensibilidad cultural, e ignora los dilemas sociales existentes (relacionados con la innovación organizacional). Este artículo tiene como objetivo promover un argumento filosófico y empírico dentro de los determinantes contextuales; por lo tanto, reflexiona sobre las cuestiones éticas clave y los dilemas sociales que los sistemas basados en la nube plantean a los sistemas de conocimiento distribuidos dentro del proceso dialéctico de la diversidad de la educación superior (global versus local). A este respecto, un marco estratégico de implementación de la Universidad Electrónica que interactúe con la ética y la cultura (desarrollado por el primer coautor) ayudará tanto a analizar como a comprender las prácticas actuales de e-learning en la educación superior como a sugerir posibles directrices futuras para el proceso dialéctico entre global y local.

P a l a b r a s c l a v e: nube, conocimiento, glocal, educación superior