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*Original Paper*

# Advocating for Use of Instructional Design and Technology (IDT) As a Contribution to Curriculum Decolonization and Expansion of Access to Higher Education in Africa

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## 1. Executive Summary

African education seems to need reform in response to two unrelated problems. One of the problems came to the fore during the COVID-19 pandemic that disrupted education throughout the world. It became clear that over-dependence on face-to-face pedagogies was a weakness. The pandemic forced learning institutions across the globe to either close or adopt other educational delivery modes. Online learning platforms appeared to be the way to go, but for most African educational institutions south of the Sahara, the use of information communication technology (ICT) for educational purposes was not a practical solution because of reasons associated with access to ICT infrastructure and equipment, and availability of suitably qualified human resources to support use of educational ICT. One category of the required human resources is that of instructional design and technology specialists.

The other problem is that after a long history of colonization and dependence on the West, Africa's education systems seem to need decolonization. In recent years, African scholars have been sharing their thoughts about decolonization of African education (See for instance Heleta, 2016; Mbembe, 2016; Nyoni, 2019; Moosavi, 2020; Foveti, 2021). They have observed that although African states have been independent for several decades, the ghost of colonialism still lingers on in the curricula of most African education systems.

As African scholars of history (and those of other disciplines) look forward to changing the curriculum to make it more relevant and meaningful for students, the field of instructional design will prove to be very instrumental. According to the University of Arizona (2018), IDT or instructional design technology is "The practice of designing, creating, and delivering digital and physical instructional experiences and products for those who need it." Instructional design is also defined as the "reflective process of translating principles of learning and instruction into plans for instructional materials, activities, information resources, and evaluation" (Smith & Ragan, 2004, p. 4). Lecturers, and professors of history, like other academicians in all disciplines, could benefit from the theory and practice of IDT to enhance the teaching of history.

The purpose of this paper is to propose an approach to the application of IDT theory and practice to history pedagogies suitable for face-to-face (F2F) and non-F2-F teaching/learning interactions, including teaching by inquiry, cooperative learning, lecture-discussion, and reflection. The paper also proposes systemic innovations that must be made to sustain IDT in Africa's institutions of higher learning.

### 1.1 Background

While the world of education is recovering from the negative impact of a pandemic that disrupted teaching and learning in all parts of the globe, Africa is poised to have to deal with an additional educational malady, namely an age-long colonial hangover in the continent's education systems. Both problems call for innovation in the design and delivery of curricula, and both problems and their solution

should be of interest to history educators in Africa.

## 2. Redesigning Pedagogy Post-COVID-19 Pandemic

Even with the anticipated end of the COVID-19 pandemic, its impact on education is set to be long-lasting. According to UNESCO (2020), a total of 144 countries suspended the traditional face-to-face (F2F) instructional delivery mode, affecting over one billion students whose institutions of learning were not immediately able to adapt their modes of teaching and learning. The world has learned through this pandemic not to rely too heavily on F2F delivery modes but to expand the options to include other pedagogies that allow for effective delivery and assessment of academic knowledge without students and instructors having to share the same physical space.

This expansion of pedagogical options to include technology based non-F2F platforms, invariably raises a myriad of logistical constraints. For example, as Pokhrel and Chhetri (2021) aptly observed recently: ‘The use of suitable and relevant pedagogy for online education may depend on the expertise and exposure to information and communications technology (ICT) for both educators and the learners’ (p. 133). In some rural parts of Africa, lack of expertise and exposure to ICT is attributable to several realities of developing economies, such as unequal internet access between urban and rural populations, unreliable internet services, high cost of ICT, lack of ICT personal equipment, erratic power supply (at best) or (at worst) lack of electrical power to drive ICT (see, for instance, Mukuni, 2019; Apuke & Lyendo, 2017; Afolabi, 2015; Intsiful et al, 2003).

## 3. Decolonizing Africa’s Education

Sub-Saharan Africa has been politically free from colonialism for several decades, and yet the curricula in the region are still criticized for being laden with colonial baggage. After reviewing the history of education in Africa for the period 1910-1990, Malisa and Missedja (2019), for instance, concluded that:

Colonial education, as it were, resulted in the creation or making of a new African, an anglophile whose values were shaped by a new educational system that negated what it was designed to deliver. Under colonialism, every educational system and every colonial institution had, as its purpose, the remolding of the African child (p. 9).

According to Ezeanya-Esiobu (2019), the negative effects of this remolding of the African child’s mind include suppression of innovation and creativity, inadequate familiarity with indigenous knowledge, and over-dependency on external agents.

Several African scholars are calling for decolonization and reconstruction of African education and the debate rages on, while some are calling for caution because currently Africa does not have any fallback position to replace Eurocentric education or needs to focus on internationalization rather than Africanization (behold, for instance, Heleta, 2016; Mbembe, 2016; Nyoni, 2019; Moosavi, 2020; Woldegiorgis, 2020; and Foveti, 2021).

In summary, with specific reference to the curriculum for history education in Africa, the justification for decolonization includes the following reasons:

1. Time has come to tell African history from African perspectives.
  - Unlike many other disciplines, history has many sides. The side that is told depends on who is telling it
  - Told by colonialists, Africa history is recorded from the point of view of an outsider with little or no understanding of the cultural nuances of the events and participants
  - African proverb: Until the lion learns to tell his story, the tale of the hunt will glorify the hunter
2. Time has come to situate history in the African conceptual framework of *Ubuntu*
  - The Bantu people are guided by the philosophy of *Ubuntu* in their interactions with each other, the environment, and the spirit world
  - *Ubuntu* empathizes several values including respect for human dignity rather than the profit motive; communalism rather than individualism

- It is time to analyze African history to discover and bring out *Ubuntu* in the historical events of the Africans
3. Increase content related to colonized and marginalized peoples (Jackson, 2021)
- It is time to promote the voices of the marginalized for the world to hear their accounts of stories that have been distorted by the powerful

The process of deconstruction and reconstruction of African education may be daunting and may perhaps have unattainable goals if the intent is to completely pull down the status quo and replace it with something new. However, there is merit in considering fixing the problem by removing what is agreed to be inimical to the cultural and economic aspirations of Africa and putting in what is desirable for the good of the African cause, for instance indigenous knowledge and African value systems.

#### 4. Problem

In redesigning the African curricula because of the lessons learned during the COVID 19 pandemic or in response to the calls for decolonization of African education (or in response to both factors), the theory and practice of instructional design technology will come in handy. Assuming the availability of ICT expertise, equipment, and access to the internet, which for some parts of Africa is not a killer assumption, there remains a problem of pedagogical knowledge, specifically knowledge and skill concerning Instructional Design and Technology (IDT). Instructional Design may be defined as ‘the science of creating detailed specifications for the design, development, evaluation, and maintenance of instructional material that facilitates learning and performance’ (Martin, 2011). The ‘Technology’ (T) in IDT denotes the use of technology in designing, implementing, and evaluating learning and performance. The University of Arizona (2018) describes IDT as “the practice of designing, creating, and delivering digital and physical instructional experiences and products for those who need it.”

IDT involves a systematic approach to design of instructions that is grounded in scientific models, theories, principles, and best practices (Richey & Klein, 2014). Instructional design is informed by principles obtained from other sources such as cognitive sciences and cognitive psychology (Reigeluth, 1983). Instructional design is essential because when skillfully implemented, it can lead to effective and efficient means to meet the learning goals established (Rowland & DiVasto, 2013). For this reason, instructional designers are employed in various settings including schools, universities, corporations, colleges, government, and military agencies (Reigeluth, 1983).

The field of IDT is relatively new in the history of education. There are, therefore, not many instructors in Africa with the knowledge and skill of IDT. This insufficiency of IDT talent in Africa’s institutions of higher education (IHE), makes African IHE inadequately prepared to adapt pedagogies suitable for both F2F and remote learning and teaching. Africa has an urgent need to expand learning platforms through adoption of IDT because of the serious shortfall in trained human resources which has led to a mismatch between supply and demand in the labor market. According to Sarah Anyang Agbor, the African Union (AU) Commissioner for Human Resources, Science and Technology. “The root cause of the problem is a mismatch between the education they (graduates of IHEs) are getting and labor market needs” (Obonya, 2019).

One of the reasons given for the mismatch between the supply and demand for appropriately trained human resources in Africa is that by and large the curriculum is not relevant to Africa’s social and economic needs. The nature and purposes of education fashioned during the colonial era still define the curriculum today. As already mentioned, in recent years, African scholars have been sharing their thoughts about decolonization of African education (See for instance Heleta, 2016; Mbembe, 2016; Nyoni, 2019; Moosavi, 2020; Foveti, 2021). They have observed that although African states have been independent for several decades, the ghost of colonialism still lingers on in the curricula of most African education systems. Nyoni (2019), for example, has pointed out that: “For centuries an African mind has been fed Eurocentric imperial education experiences that denigrated and subjugated African cultures, civilization, language, rituals and traditions through the policy of containment and control” (p. 3).

As African scholars embark on the reconstruction of the curriculum to align it to Africa’s present and future aspirations and ethos, IDT lends itself as a tool that can be used in the design, implementation, and

evaluation of curriculum. It also provides an answer to the problem of inadequate access to education. IDT allows us to incorporate technologies like Zoom and other software and recorded classroom sessions that can be broadcasted in rural HEI centers servicing distance education learners.

## 5. Purpose

The purpose of this paper is to propose an approach to the application of IDT theory and practice to the redesigning of History Education in response to calls to decolonize African education on one hand, and, on the other hand, to history pedagogies suitable for face to face (F2F) and non-F2-F teaching/learning interactions, including teaching history by inquiry, cooperative learning, lecture-discussion, and other student-centered methods. The paper also proposes systemic innovations that must be made to sustain IDT in Africa's institutions of higher learning.

## 6. Proposal

IDT is grounded on tested learning strategies, principles, and theories, including (but not limited to) the learning theories listed below:

- a) *Behaviorism*: This learning theory assumes that learning takes place through a process of conditioning. Students are understood to have learned if their behavior is changed because of a reward or some form of sanction. Characteristics of this theory include rote learning, repetition, and reinforcement from the teacher. Instructional designers tend to apply this theory sparingly because it downplays thought processes inside the mind of the learner.
- b) *Cognitivism*: This theory assumes that learners are not just recipients or receptacles of new information. They process the new information and classify it according to what they already know. Characteristics of the theory include recognition of prior knowledge, teacher feedback, and self-monitoring.
- c) *Constructivism*: Proponents of this theory believe that students learn best when they actively participate in constructing knowledge. Characteristics of the theory include problem-solving, collaboration, information search, information evaluation, and information sharing.

In designing learning materials and selecting the appropriate technology, the instructional designer takes into account these learning theories and their best practices. For example, when creating learning materials, the designer will enable the student to identify prior knowledge that relates to the new topic. The designer will also encourage the learners' active participation through authentic tasks that require the learners to search for answers to real world problems. Effective learning environments allow for interaction among learners (for instance through group work activities) and between learners and the instructor.

Figure 1 depicts a conceptual framework for history education based on the ADDIE model. We propose the use of the ADDIE, which within the realm of instructional design practice, is a fundamental framework for designing products and processes or instructions for learning. It presents itself in 5 faces namely Analysis, Design, Development and Evaluation, with the 5th phase [which is EVALUATION] pervading all the four other phases. The beauty of this framework is its flexibility for context-oriented design and the iterations it offers the designer or instructor.

Applying this framework for the integration of IDT into the teaching and learning of History would mean that at the ANALYSIS phase (assessing to identify probable causes for a performance gap (Branch, 2009).

1. The learners and context for teaching and design would be analyzed by which approach data on the characteristics of the learner, their preferences, as well as challenges in their learning context would be collected.
2. This phase also requires finding what technology (media and procedures) exists, and other important factors would be considered.

The design phase is meant to verify the desired performances and appropriate testing methods (Branch, 2009). At this stage focus is on curriculum planning and mapping to include decolonization themes.

Within this stride, goals and objectives are set to guide the teaching and learning process in the curriculum; appropriate delivery methods (lecture, PBL, etc.) and modes of delivery (face-to-face, hybrid, blended, etc.) are selected and as well; appropriate and efficient technological tools and pedagogical strategies are selected.

Next is transforming the talk into real action by the design of the History curriculum, instructions, modules, teaching and learning resources at the DEVELOPMENT stage. This stage thus focuses on generation and validation of appropriate teaching and learning resources that will be required during the life of the instructional modules on History (Branch, 2009). It also involves practice and pilot tests of tools and strategies designated for teaching History students.

The implementation phase is meant for preparing the learning environment and engaging the students in the learning process (Branch, 2009). At this stage the focus is on the application of the teaching and learning strategies and the selected technological tools within authentic teaching and learning instances of the subject, History.

The final phase, Evaluation, prompts the designer and the subject matter experts (i.e., History faculty) to assess the quality of the instructional product and process to ascertain whether learning goals about History student mastery, the effectiveness and efficiency of technological tools and pedagogical strategies used for teaching History within the period of review were achieved. It is worthy of note that evaluation is conducted at all the four other preceding phases to establish the effectiveness and efficiency in all decisions made and for consistency and clarity among all the phases of the design framework.

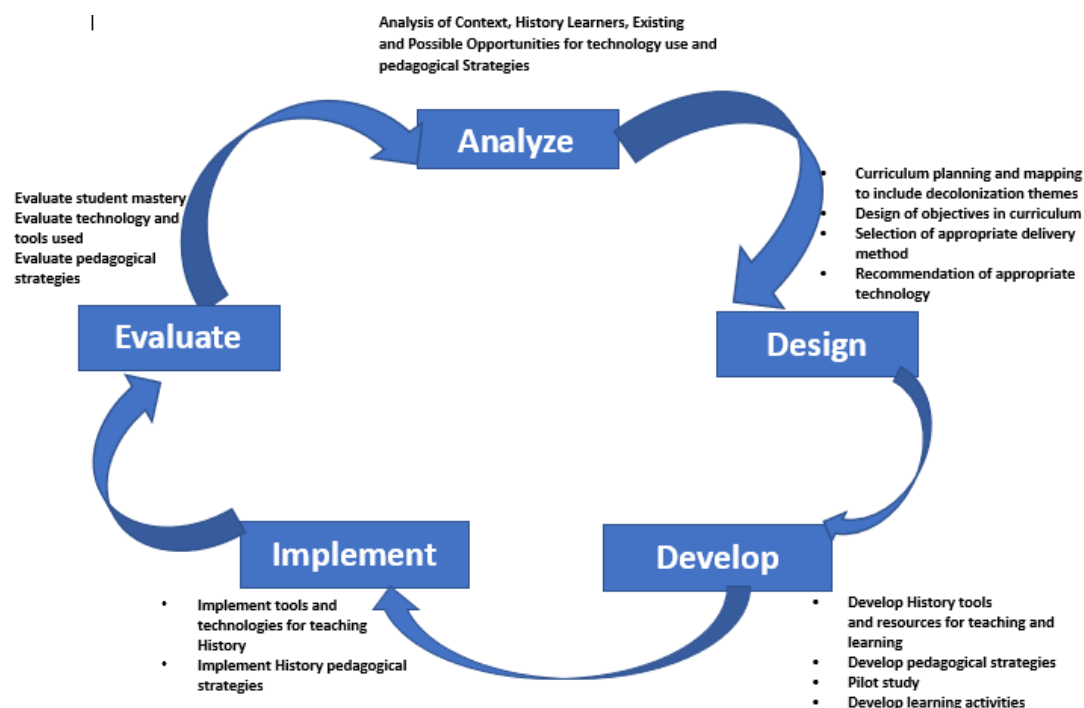


Figure 1. IDT Conceptual Framework for Teaching History with ADDIE Model

## 7. Examples of Best Practices for Applying IDT to Teaching History at Implementation Level

1. Providing learner-friendly structure to materials, e.g., providing outlines and tables to students and getting them to complete the outline with bullet points as they listen to a lecture or view a video clip

Topic: Africa's Resistance to the Trans-Atlantic Slave Trade

Instructions: Please complete the following advance organizer during the lesson

a) Reasons for the transatlantic trade

Motivation in Africa

Motivation in Europe

Motivation in America

b) Reasons for resisting slavery

c) Forms of resistance

d) Impact of resistance

2. Designing materials allowing for student-student and student- teacher interaction e.g., Discussion Forums on Zoom; Student Reflections; Group Projects

### **8. Strategies for creating IDT practitioners in African Universities**

There are various opportunities available for universities to grow IDT talent. This section discusses short- and long-term recommendations aimed at addressing the problem identified.

Short term

a) Awareness Creation: The first step is to gain awareness of the field. To gain awareness of the field, universities could collaborate with other universities who have IDT programs. There are universities willing to collaborate with other universities on instructional design opportunities. Awareness of the nature and usefulness of IDT in an academic setting may be created by inviting instructional designers to speak about their duties and responsibilities.

b) Assessment and Creation of Institutional Readiness: Readiness refers to the extent to which lecturers and staff are open to learning about IDT (and the underlying technological skills without a phobia for adopting new technologies) and to implement the learned skills. Readiness also refers to the availability of the infrastructure (for instance internet connectivity) hardware, and software needed to support IDT.

c) Training workshops: With the help of local or foreign universities that have IDT specialists, African universities may conduct online workshops (for instance using Zoom or WebEx) to train lecturers in the use of IDT principles and to train IDT support teams.

d) Support Structure: Every university will need to establish a well-equipped lab or studio, manned by a couple of IDT and ICT support staff. IDT staff will be people trained in pedagogy as well as application of technology in the designing, implementing, and evaluation of learning. ICT staff will be people qualified in the use and maintenance of communication technologies.

e) Piloting and Evaluating IDT: Before implementing long term plans for growing and sustaining IDT talent, institutions will consider the activities listed above as a pilot to be evaluated to determine the strategies for effective design and implementation of long-term measures.

Long term

a) Degrees in IDT: There will be a need to have lecturers trained to the master's or PhD level within Africa or abroad. These specialists will form the hub of IDT activities in the universities. They will have capacity to develop and teach IDT courses, support the university IDT development programs, and ensure sustainability of IDT in universities.

b) Professional Associations: It will be helpful to establish IDT professional associations at regional and continental level to create communities of practice, enabling IDT practitioners to share their experiences, lobby for growth and sustainability of the IDT field, and to establish IDT certifications.

- c) Well-equipped Labs: Every university should have well-functioning and well-equipped labs and studios supporting students and lecturers in the application of IDT.
- d) Policy Environment: For the development and sustainability of IDT, there is a need to create university and national policies supportive of IDT (including provision of resources, mandating institutions to have IDT units, and encouraging inter-university collaboration).

## References

- Afolabi, A. A. (2015). Availability of online learning tools and the readiness of teachers and students towards it in Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria. *Procedia-Social and Behavioral Sciences*, 176, 610-615.
- Apuke, O. D., & Iyendo, T. O. (2017). Two sides of a coin: revisiting the impact of social networking sites on students' performance in selected higher educational settings in Nigeria. *Science International*, 29(6), 1265-1275.
- Branch, R. M. (2009). *Instructional design: The ADDIE approach* (Vol. 722). Springer Science & Business Media.
- Ezeanya-Esiobu, C. (2019). *Indigenous knowledge and education in Africa* (p. 115). Springer Nature.
- Fovet, F. (2021). Using universal design for learning to create inclusive provisions for indigenous students in higher education: Decolonizing teaching practices. In *Redesigning Teaching, Leadership, and Indigenous Education in the 21st Century* (pp. 253-274). IGI Global.
- Heleta, S. (2016). Decolonisation of higher education: Dismantling epistemic violence and Eurocentrism in South Africa. *Transformation in Higher Education*, 1(1), 1-8. <https://doi.org/10.4102/the.v1i1.9>
- Intsiful J, Okyere PF, Oase S (2003). Use of ICT for education, research and development in Ghana: Challenges, opportunities and potentials. *Journal of Technology Transfer*, 25, 329-342. <http://www.ejds.org/meeting2003/ictp/papers/Intsiful.pdf>
- Jackson, R. (2021, March 10). An introduction to decolonising the history curriculum. *EuroClio*. Retrieved October 11, 2021, from <https://www.euroclio.eu/2021/03/10/an-introduction-to-decolonising-the-history-curriculum/>
- Malisa, M., & Missedja, T. Q. (2019). Schooled for servitude: The education of African children in British colonies, 1910-1990. *Genealogy*, 3(3), 40.
- Martin, F. (2011). Instructional design and the importance of instructional alignment. *Community College Journal of Research and Practice*, 35(12), 955-972.
- Mbembe, A. (2016). Decolonising the university: New directions. *Arts & Humanities in Higher Education*, 15(1), 29-45. <https://doi.org/10.1177/1474022215618513>
- Moosavi, L. (2020). The decolonial bandwagon and the dangers of intellectual decolonisation. *International Review of Sociology*, 30(2), 332-354.
- Mukuni, J. (2019). Challenges of educational digital infrastructure in Africa: A tale of hope and disillusionment. *Journal of African Studies and Development*, 11(5), 59-63.
- Nyoni, J. (2019). Decolonising the higher education curriculum: An analysis of African intellectual readiness to break the chains of a colonial caged mentality. *Transformation in Higher Education*, 4(1), 1-10.
- Obonya, R. (2019, September 23). Preparing Africa's graduates for today's jobs. *Africa Renewal*. Retrieved from <https://www.un.org/africarenewal/magazine/april-2019-july-2019/preparing-africa%E2%80%99s-graduates-today%E2%80%99s-jobs>
- Pokhrel, S., & Chhetri, R. (2021). A literature review on impact of COVID-19 pandemic on teaching and learning. *Higher Education for the Future*, 8(1), 133-141.

- Reigeluth, C. M. (1983). Instructional design: What is it and why is it. *Instructional-design theories and models: An overview of their current status*, 1, 3-36.
- Richey, R. C., & Klein, J. D. (2014). *Design and development research: Methods, strategies, and issues*. Routledge.
- Rowland, G., & DiVasto, T. (2013). Instructional design and powerful learning. *Performance Improvement Quarterly*, 26(2), 9-42. <https://doi.org/10.1002/piq.21141>
- Smith, P. L., & Ragan, T. J. (2004). *Instructional design*. John Wiley & Sons.
- UNESCO. (2020). *Education: From disruption to recovery*. Retrieved from <https://en.unesco.org/covid19/educationresponse>
- University of Arizona (2018). *What is instructional design & technology?* Retrieved from <https://www.google.com/amp/s/www.uagc.edu/blog/what-is-instructional-design%3famp>
- Woldegiorgis, E. T. (2020). The emergence of decolonisation debates in African higher education: A historical perspective. In *Decolonisation of Higher Education in Africa* (pp. 17-35). Routledge.