Flipping Nigeria’s Public School Classrooms for the Twenty-First Century: a Problem-Solving Approach

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Abstract
Given the increasing use of flipped classroom as innovative pedagogical model, this paper set out to accomplish three things: (1) to offer an in-depth conceptual explanation of flipped classroom and its operational mechanics; (2) to identify the unique challenges that Nigeria’s public school systems face in catching up with emerging and innovative trends in Twenty-First Century digital-based learning; and (3) to suggest smart and creative ways of overcoming such challenges without breaking the banks or waiting for a systemic transformation of the public school systems.

Keywords: Flipped Classroom, Technology-Enhanced Learning, Inverted Classroom, Active Learning, Pedagogy, Student-Centered Learning.

Introduction
A combination of forces and factors has created an important and emergent new direction in both the philosophy and the mechanics of teaching and learning. Advancements in internet and digital technologies have not only changed the way we think, learn, interact, and process information – forcing a paradigmatic shift – they have also presented great and strange opportunities that were both unthinkable and unimaginable in the era of traditional pedagogy. With these technologies, teaching and learning has ceased to be solely fixed, linear, and located spatial activities, involving the instructor, the student, and a physical environment (otherwise known as the classroom). Today, thanks to these technologies, teaching and learning has become much more distributed, more planar, less located, and less space-based. The classroom as the exclusive space for learning and instruction has increasingly been deemphasized. Teaching and learning now occurs outside the classroom – at home, in the kitchen, in the living room, in the bedroom, in the patio, in the bathroom, in the basement, in the garage. It also occurs in internet cafes, in hotspots, at office desks, in the gymnasiums, in walkout tracks, in the car, in the parks. In fact, teaching and learning now occurs in every space where fixed and mobile devices can access the internet or process multimedia. With that, the monopoly and the pedagogical orthodoxy of the traditional classroom as the only space for teaching and learning has been broken. Obviously, these are major and monumental developments. They are shifts in pedagogical interactions that are global, or would seem global, in their magnitude, except that some countries are way less keyed in and impacted by them than others. The danger in that asymmetry is that in a digitally divided world order, the same forces of globalization that
introduce these developments, developments that are not equally distributed across nations and societies, will use standard rubrics and metrics to assess performances and award rewards. Students from digitally disadvantaged nations will still be expected to compete on equal terms with their counterparts from nations where these innovations are not just very easily accessed, but are also taken for granted. The African continent is not faring too well in the race for the future. Lack of basic infrastructure and the absence of institutional investments have combined to keep Africa on the margins and rears of the global race for the digital future. Particularly so is the deplorable state of educational infrastructure in Nigeria. Decades of warped and misaligned developmental goals and priorities have resulted in an educational system that has shown itself ill-equipped, ill-prepared, and incapable of utilizing existing and emerging technologies to join innovative new directions in teaching and learning.

This paper presents flipped classroom as one such innovation in teaching and learning; outlines the benefits that come with it; examines the challenges to its implementation in Nigeria; and offers some suggestions on how those challenges can be met without further delay. The paper presents flipping from both theoretical and practical dimensions – not just describing it, but also giving insights into its emergence in the instructional universe and how it is implemented. With such theoretical and practical insights into flipping, the benefits of this wonderful innovation to learners, instructors, parents, and the overall educational system, become apparent. Unfortunately, however, a review of the current state of educational infrastructure, in particular, and the general systemic state of existence in Nigeria, reveals why the promise and benefits of flipping may be elusive to the average Nigerian student and the Nigerian instructor. Fortunately, however, a few creative actions in the right directions can help overcome the challenges and make the promise and benefits of flipping achievable for the Nigerian student and the Nigerian instructor.

Origin, Concept, and Philosophy of Flipped Classroom

To some, the idea for flipped classroom, as an innovative instructional model, is traceable to the late 1990s effort of two veteran Woodland Park High School chemistry teachers, Jonathan Bergmann and Aaron Sams (Talley & Scherer, 2013). However, according to Moore, Gillett, and Steele (2014), flipping has an earlier origin. They argued that the concept of flipped classroom originated with the effort led by Professor Erik Mazur, a Harvard University physics professor. By their argument, flipping originated at the college level, not high school level. They contended that early iterations included “text files, interactive demonstrations, and problem solutions that allowed students to choose content that met their individual needs and addressed common misconceptions” (Moore et al., 2014, p. 421, citing Mazur, 1991, p. 38). It was advancement in technology that took the concept to a whole new level, resulting in the use of internet and video resources (Foertsch, Moses, Strikwerda, & Litzkow, 2002).

In the late 1990s, Bergmann and Sams adapted the flipped classroom model for secondary school classrooms (Moore et al., 2014). Faced with the daunting task of finding the time to reteach lessons for absent students, Bergman and Sams spent $50 on a software with which they recorded and annotated lessons, and posted them online (Tucker, 2012). With those recordings, absent students had the opportunity to see what they missed. But, it was not just the absent students who had missed the class; it was also students who had not missed class. The students who had been present in class used the online material, “mostly to review and reinforce classroom lessons” (Tucker, 2012, p. 82). And both groups of students were full of appreciation for this wonderful learning innovation. With the profusion of appreciation from
students, Bergmann and Sams soon realized what a wonderful opportunity they had to radically rethink how they used class time (Tucker, 2012). That opportunity came in the form of flipped classroom. As noted by Elmore (2012), teachers across the United States are now implementing a concept that involves the inversion of traditional instruction. Flipping has become even more popular with the increased availability of high-quality online lectures available on sites such as Khan Academy and very user-friendly software that allows teachers to create their own lecture videos.

A major concern in creating and engaging students in active learning environments is the factor of time. There does not seem to be enough time in the traditional pedagogical approach to implement student-centered learning environment. Flipped classroom models have been shown to be effective in meeting these concerns (Baker, 2000). They do this by allotting more class time for active learning activities and leveraging access to advanced learning technologies to support blended learning. With access to online video lectures prior to in-class sessions, students are prepared to take part in more interactive and higher-order learning activities such as debates, discussions, and problem solving (Baker, 2000; Bergman, Overmyer, & Willie, 2012; Davies, Dean, & Ball, 2013; Foertsch, Moses, Strikwerda, & Litzko, 2002; Fulton, 2012a; Hughes, 2012; Lage, Platt & Treglia, 2000; Talbert, 2012; Zappe, Leicht, Messner, Litzinger, & Lee, 2009). When classroom are flipped, students can engage in outside classroom events. This has its benefits as students are able to not just allocate their time, but also to pace their online learning consistent with their individual levels of grasp. And when they return to face-to-face classroom, students are better able to become more active and interactive by actively engaging in group activities rather than passively listening to lectures.

Teachers, on the other hand, are able to utilize more in-class time to observing student performance and offering instant feedback (Fulton, 2012a; Herreid & Schiller, 2013; Hughes, 2012). Here is how Lage et al., (2000) summed it up:

Inverting the classroom means that events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa. The use of learning technologies, particularly multimedia, provide new opportunities for students to learn, opportunities that are not possible with other media” (p. 32).

Strayer (2012) agreed, contending that a distinctive feature of flipped classrooms is the “regular and systematic use of interactive technology” (p. 172), a feature that debunks the scathing argument that flipped classroom models are nothing new. That argument asserts that teachers have always used readings and computer-assisted instructions to prepare students for in-class activities (see also Kim, Kim, Khera, & Getman, 2014).

With flipping, students use what traditionally used to be homework time “listening to lectures and moving what used to be homework into classrooms” (Elmore, 2012, p. 6). The beauty of flipping is that students are able to listen to teacher’s lectures at home at their own pace. This is done typically via instructional videos that the teacher posts online or podcasts that students can download. Here is how Elmore (2012) presented it:

Students use their class time to apply what they’ve learned from the lectures, working in the presence of teachers, often in collaboration with other students. When students apply what they’ve learned, teachers can more easily determine if they have ‘gotten it’ or if students need additional instruction (p. 6).

Since the emergence of flipped classroom as both conceptual and philosophical approach to learning, several models and variants of it have equally emerged, depending on the unique circumstances of the school. However, regardless of the model, the fundamental idea is to flip
the traditional instructional approach. As stated by Carpenter and Pease (2012), flipping refers to a model that “reverses what’s traditionally considered appropriate for the classroom and homework” (p. 37). Instructional materials such as videos and interactive lessons, which traditionally occurred in the classroom during scheduled class times, are now accessed at home – in advance of class. This frees up classroom as the place to “work through problems, advance concepts, and engage in collaborative learning” (Tucker, 2012, p. 82; Strayer, 2007; Moore et al., 2014). The same view is shared by Cargile (2015) who agreed that with flipping, students are presented with topics through instructional videos which they watch at home as homework. The result of that, she argued, is that there are fewer teacher lectures; and as a result, “more time is available for higher-order activities, such as collaborative group projects and meaningful classroom discourse” (Cargile, 2015, p. 35; Bergmann & Sams, 2012; Khan, 2012). When classrooms are flipped, every aspect of instructional delivery is open to strategic reengineering in ways that ensure the effective and efficient use of time. It is a model that “stands in sharp contrast to lectures, demonstrations, and independent practices that have dominated classrooms in the United States” (Moore et al., 2014, p. 421, citing Stigler & Hiebert, 1999).

With flipping, there is greater real classroom interaction time between the instructor and the student, more than half of classroom activities having been moved out of the classroom – to home. This much Bergmann himself admitted (Tucker, 2012). Bergmann testified that he could more easily “query individual students, probe for misconceptions around scientific concepts, and clear up incorrect notions” (Tucker, 2012, p. 82). With flipped classroom, the instructor is able to spend more time with struggling students. Such students find homework more interesting, given its digital appeal, and come to class ready to work through difficult and challenging problems with the instructor and peers in the classroom. Carpenter and Pease (2012) put it even more elegantly:

> At home, students watch online lectures, while class time is spent on individual practice, group tasks, projects, or other processing activities. The teacher, freed from front-of-class lecturing, works more intensively with individuals and groups of students. The result of this increased interaction is that teachers can provide appropriately challenging experiences for each learner” (p. 37).

Bergmann promoted flipped classroom as being able to foster “better relationships, greater student engagement, and higher levels of motivation” (Tucker, 2012, p. 82). When classrooms are flipped, students come to class with stronger background knowledge, and thus able to do more in class (Moore et al., 2014; Bergman & Sams, 2012). The same sentiment was echoed by Carpenter and Pease (2012) who correctly observed that flipped classrooms “hold great promise for increasing student responsibility for learning” (p. 37). When classrooms are flipped, teaching emphasis shifts from the instructor to the learner (Noonoo, 2012). And as Elmore (2012) rightly observed, “teachers who have flipped classrooms claim that students become more independent learners” (p. 6). They are because they no longer have to write down everything that the teacher writes on the board, and go home to try to interpret and translate that into the assignment they are given to do as homework. That traditional model creates a disconnect as students have difficulty making the connection between what they have been taught in class and what they are required to apply at home. As Elmore (2012) suggested, what students need is help with understanding content, not delivering content.
Flipped Classroom and Student Empowerment

The past decades have witnessed an increased recognition in higher education standards of the value of student-centered learning environments in which learners are actively involved in higher-order tasks – taking charge and responsibility of their own learning (Kim et al., 2014; Hannafin, Hill, & Land, 1997; Means, 1994; Shea et al., 2012). A student-centered learning environment results in the application of more active learning strategies to classroom instruction that utilize such activities as student presentations, self and peer evaluation, small group problem solving, and group discussions (Kim et al., 2014; Zappe et al., 2009). Research has shown that students learn more and better when they are given the opportunity to be active participants in the classroom and in their own learning (Bonwell & Eison, 1991; Vygotsky, 1978). Flipping does not require that teachers do more than they are already doing; instead, they just need to develop a different approach to instruction. Rather than do more, teachers only need to offer opportunity for students to assume greater responsibility for their own learning (Carpenter & Pease, 2012). A key element of this new approach that gives more opportunity and responsibility to students for their own learning is the encouragement and development of critical thinking. Research suggests that students learn more when they are required to not just apply and transfer knowledge content, but also to reflect on them (Bransford, Brown, & Cocking, 2000).

When students are encouraged and allowed to be more active participants in their own learning, not only do they develop deeper understandings about content, but they also acquire “more academic and life skills, and develop habits of mind that benefit them beyond the classroom” (Carpenter & Pease, 2012, p. 37). The co-construction of knowledge also requires that learning, as the process of knowledge acquisition, be co-constructed, with shared responsibility between teacher and student. When responsibility for learning is shared between teachers and students, schools are more likely to produce the desired results (Carpenter & Pease, 2012).

Flipping is consistent with the increasingly popular paradigm of student-centered pedagogies, a shift away from the traditional orthodoxy of instructor-centered pedagogy. Student-centered pedagogy promotes “minimal teacher lecturing or direct transmission of factual knowledge, multiple small group activities that engage students in discovery learning or problem solving, and frequent student questions and discussion” (Leu & Price-Rom, 2006, p. 19; Darling-Hammond & Bransford, 2005; Hopkins, 2002). To achieve the goal of student-centric learning, we must begin to probe teaching strategies regarding the extent to which they increase student participation in, and responsibility for, the learning process (Carpenter & Pease, 2012). To do that requires a recognition that teaching does not always result in learning. When students are simply handed content on a platter, not much is gained by way of learning. As forcefully argued by Carpenter & Pease (2012), if we want students to become more than “multiple-choice experts, then teachers must help them do more of the intellectual work of the classroom” (p. 37).

With flipped classroom approach, students gain a great sense of empowerment as they become more active in their own learning. Students can watch video at home. In doing that, they are able to stop, rewind, and review the content as often as they need to grasp a concept (Davies et al., 2013; Foertsch et al., 2002). Nothing can be more empowering for a student than being able to manage the pace of learning according to their own time schedules and levels of understanding. In arguing her ten reasons for flipping a classroom, Fulton (2012a) presented as number one reason the fact that students move at their own pace. She also alluded to the flexibility and appropriateness of the use of technology for 21st century learning. According to her, “students have technology all around them and will be using it for...
learning throughout their academic and professional careers, accessing information 24/7” (Fulton, 2012a, p. 23-24). It will be a waste of these 21st century tools, and a great disservice to the 21st century students, if instructors fail to meet the 21st century learners where they are. Digitally, they have already empowered themselves with their smartphones, tablets, computers, laptops, IPad. They should not be disempowered by the instructor’s refusal to incorporate these empowerment tools into curriculum design.

Another aspect of empowerment, which flipped instructional model offers the student, is the opportunity for collaboration. When lectures are moved outside of the classroom – to homes, libraries, and coffee shops – students have more opportunities to collaborate with each other in informal face-to-face learning environments. What that does is that less time is spent in the classroom where the student is a passive vessel waiting to be filled, while more class time is spent on active interaction with the teacher and other students, dealing with challenging content (Carpenter & Pease, 2012). With collaborative learning comes a sense of classroom community, which is also empowering for the average student. The benefit of this classroom community in pedagogical utility is amply captured by Carpenter and Pease (2012) who argued:

For a learning environment to effectively support student learning and growth, students must invest in themselves and their peers by taking on classroom leadership roles, collaborating with one another, and providing meaningful feedback to their teacher and other students in the class. Teachers are typically seen as the leaders of the classroom. But students can also take on important roles that facilitate learning. When given appropriate guidance and support, students can lead classroom discussions, help select instructional materials, and coordinate group projects. Assuming such roles will contribute to individual student growth and to peers feeling more responsible for the success of the classroom community (p. 40).

Students must be empowered co-constructors of learning. A learning model that promotes a sense of classroom community also engenders a strong sense of empowerment. Flipped classroom helps to accomplish that. The role of the teacher in building that community involves what Carpenter & Pease (2012) saw as the scaffolding of the development of collaborative skills and being responsive to group dynamics. Also, they maintained that it is the students who assume the bulk of the responsibility for building a classroom community through peer assessment. According to them, “teachers frequently expend copious time and energy providing feedback on student work when such tasks can be minimized through peer review, another powerful way to involve students in the assessment process” (p. 41).

Design Principles for a Typical Flipped Classroom
As already noted, several variants of the flipped classroom exist. Bergmann and Sams (2012) proposed some design considerations for the flipped classroom. They suggested such considerations as time to learn new software and support from administration (Bergmann & Sams, 2012; Kim et al., 2014). Bergman et al. (2012) would later come up with a list of what characteristically described the flipped classroom, including a means to increase interaction and personalized contact time between students and teachers (Kim et al., 2014). What this means is that it is not necessarily a flipped classroom if all that is done is to post content online if freed up class time is not utilized to increase interaction and personalized contact between instructor and students and between student and peers. Here are four design
principles proposed by Brame (n.d.) at the Vanderbilt University’s Center for Teaching (cited by Kim et al., 2014):
  a. Provide an opportunity for students to gain first exposure prior to class;
  b. Provide an incentive for students to prepare for class;
  c. Provide a mechanism to assess student understanding; and
  d. Provide in-class activities that focus on higher-level cognitive activities.

These four design principles can be accomplished within the theory driven analytic framework – Revised Community of Inquiry (RCOI) (Kim et al., 2014; Garrison, Anderson, & Archer, 1999; Shea & Bidjerano, 2010; Shea et al., 2012; Swan, Matthews, Bogle, Boles, & Day, 2012). The RCOI framework enunciates four elements that contribute to a successful learning environment: Cognitive Presence, Social Presence, Teaching Presence, and Learner Presence. Kim et al (2014) proposed nine design principles for the flipped classroom resulting from the design framework that emerged from their study data. They adopted the first three principles from the design recommendations of Brame (n.d.): Provide an opportunity for students to gain first exposure prior to class; provide an incentive for students to prepare for class; provide a mechanism to assess student understanding. The remaining six principles they came up with as new proposals for creating flipped classroom events that advance student-centered learning (Kim et al., 2014).

Table 1 below represents their nine-design principles for student-centered flipped classroom:

| Table 1. Nine design principles of the flipped classroom (Kim et al., 2014) |
|-----------------------------|-----------------------------------------------------------------|
| **Elements**                | **Associated Activities**                                      |
| Teaching Presence           | a. Provide an incentive for students to prepare for class;     |
|                            | b. Provide a mechanism to assess student understanding; and    |
|                            | c. Provide prompt/adaptive feedback on individual or group works. |
| Learner Presence            | a. Provide enough time for students to carry out the assignments |
| Social Presence             | a. Provide facilitation for building a learning community, and  |
|                            | b. Provide technologies familiar and easy to access           |
| Cognitive Presence          | a. Provide an opportunity for students to gain first exposure prior to class; |
|                            | b. Provide clear connection between in-class and out-of-class activities; and |
|                            | c. Provide clearly defined and well-structured guidance         |

**Challenges of Flipping the Classroom**

Like every new idea, challenges exist. Flipped classroom is no exception. Flipped instruction can only be implemented successfully if all students have, not just consistent computer, but also internet access at home – before or after school. This has not been the experience of many teachers, who have found equitable home computer and internet access to be an ongoing issue even in wealthy school districts. According to U.S. Census Bureau (2014) report, only 78.9 percent of U.S. households had a computer and 74.8 percent had access to
the internet in 2012. In that same year, only 45.3 percent of U.S. adults, age 25 or older, had smartphones (Cargile, 2015, p. 37).

Beyond logistics, there are institutional-level challenges. As noted by Hull, Scott, and Higgs (2014), institutional barriers must be overcome for “digital age pedagogy” to work (p. 56). Citing a survey of more than 300,000 K-12 students by Project Tomorrow (2013), Hull et al. (2014) reported that students want to use “the same mobile devices and social media tools during the school day that they use outside of school and that they are frustrated by school policies and other institutional barriers that thwart them” (p. 56). And as Strayer (2012) reported, students alleged a considerably lower level of structural support to facilitate student participation during flipped classroom events, and warned that this lack of support might result in lower student engagement.

Even with the recognition of the potential values of student-centered learning, creating such environments remains a challenge. The design and implementation of such learning environment requires that teachers are prepared to use new pedagogies and to buy into the expanded roles and responsibilities that come with student-centered learning. This has not always been so (Brush & Saye, 2000; Hannafin et al., 1997). Strayer (2012) observed that teachers often have to deal with the challenge of managing their limited classroom time and limited number of face-to-face classroom meetings, noting that such time management is needed to achieve an effective balance between lectures and active learning strategies.

Meeting the Challenges Confronting Flipped Classrooms

A major consequence of the flipped classroom format is that it changes the roles and responsibilities of all those who are involved in it: students, instructor, and the university. For this instructional model to work, students must commit to becoming active learners, with the attendant responsibility for completing the online components of the curriculum before class, and taking part in the tutorial discussions and activities. But what happens when students are willing to become active learners but do not have the digital tools needed? Fulton (2012b) took a major stab at this question when she wrote:

In today’s technology-infused environment, overload can pose a greater problem than access. Sometimes, students can’t log on and watch videos at home if several family members need to use the family computer or get on the internet in the evening. For these students and those without access to their own technology devices, the school is developing creative solutions: download lesson material on CDs or flash drives, open computer labs, and extra devices available in all classrooms (p. 24).

Fulton’s (2012b) overload concerns may not be a major problem for students who have high-speed internet at home, but it is for students who have dial-up access. For those students, the teacher can provide them with the videos on a flash drive. Another option is to use DVDs as a medium of delivery. Fulton (2012b) also observed that students who have no or limited internet access often choose to make out time to “watch the videos before school or during their lunch in the media center while others go to a friend’s house to use their smartphone” (p.24).

Flipping Nigeria’s Public Classrooms

If the above highlighted challenges in flipping classrooms in developed countries are real, and they are; then, they are even more so in a developing country like Nigeria. A major problem in teaching and learning in Nigeria is the perennial issue of poor funding of education. While 31% of Ghana’s2012 budgetary allocation went to education, only eight
percent of Nigeria’s 2012 budget was allocated to education, a figure far lower than the 26% recommended by United Nations Educational, Scientific and Cultural Organization (UNESCO). Even in 2003, when Nigeria’s economy was said to have grown by five percent, this did not result in any appreciable increase in budgetary allocation to the education sector (Adeyemi, 2011, p. 300).

Reacting to this unbelievably poor funding of education in Nigeria, in relation to its gross national product, Adeyemi (2011, p. 301, citing Olawepo, 2001) described it as a national scandal, especially when compared with other African countries. According to him, while Nigeria spent 1.2 percent of its GDP on education in the year 1995, Ghana spent 2.6 percent, Kenya 2.5 percent, and South Africa six percent in the same year (Adeyemi, 2011, p. 301). The same sentiment was echoed by Nwachukwu (2014) who noted that more than thirty years after the introduction of the compulsory Universal Primary Education (UPE), Nigeria’s educational sector at all levels was still mired in poor performance and characterized by the crisis of funding. According to him, “there appears to be a perennial crisis of funding and lack of definite structures and strategies in funding of education” (p. 51).

Question then is: how do you even dream of the idea of flipped classrooms in a country like Nigeria? How do you go about implementing an instructional model that requires digital technology in a country where a sizeable number of the population live below the poverty level and the educational sector funding has been described as a scandal? Obviously, the issue of poor funding of education is one that should be addressed with a sense of urgency. Calling for better funding of education in Nigeria is not a scholarly contribution in any way. Thousands, if not millions, of prior authors have made such calls. Therefore, this paper must go beyond the call for better funding, seeing as it has seemingly fallen on deaf ears over the years and decades. The paper offers some smart and creative ways for meeting the challenges of flipped classrooms in a poorly resourced educational system.

Many of the ideas suggested by Fulton (2012b) can work in Nigeria. Nigerian school instructors can use offline media, such as downloading lesson material on DVDs, CDs or flash drives, and offering them to their students. At a very minimal cost, Nigerian schools could provide computer labs where students can access desktop computers. Also, schools can establish media centers, equipped with TVs and digital players, and students could use such centers to watch video contents before class or during break. Schools should be able to negotiate with internet data providers for bulk purchases. Students should, in turn, be able to buy data services through their schools at a discounted rate negotiated by their schools. If schools have laptops, students could sign them out for agreed number of hours, including overnight, trackable for school purposes only.

One major area where the Nigerian public school system has continued to fail is in alternative support and funding. Government has remained the sole funding source for public education. However, if there is one thing the past several decades have revealed, it is that Nigerian governments at the federal, state, and local levels, have not done, and cannot be expected to do, a near-adequate job of sole funding of public education. Sadly, it is not that the resources are not there; it is more because official corruption and misplaced priorities, a function of the latter, have combined to starve public education of needed funding. Public school administrators must recognize this sad reality and find alternative ways out. Even in countries where governments have done way better jobs of funding and supporting public schools, public school administrators have gone to alumni associations, captains and leaders of businesses and industries, and corporate citizens for public school funding. These alternative sources could help with the resources needed for the effective flipping of Nigeria’s public school classrooms for the twenty-first century.
Conclusion
Arguably, one area of our social world that has utilized advances in technology the most is teaching and learning. Pedagogical developments have seen major shifts in reaction to innovative developments in technology. Flipped classroom is a pedagogical paradigm that is technology-based. With it, traditional pedagogical roles change. Much of what used to be traditional classroom activities, superintended by the teacher, are now moved outside the classroom and engaged as homework. And much of what used to belong in homework, grappled with by the student and the parent, are now brought into the classroom where the teacher, the student, and the student’s peers engage them in a collaborative problem solving manner. The result is greater real classroom interaction time between the teacher and the student. Flipped classroom not only empowers the students but also gives them some responsibility for their own learning. The benefits that accrue from flipped classroom are legion. Being technology-based, a major challenge in flipping a classroom is the availability and accessibility of needed technology. As a practical matter, students must have access to the internet to be able to take meaningful part in a flipped classroom. This is the aspect of flipped classroom that presents the most challenge, especially for students in technologically developing countries where these technologies are either nonexistent or cost prohibitive. Nigeria is one such country. For a country where education has consistently received the most short shrift in budgetary allocation and funding, needed technological infrastructure for flipped classroom are not readily available. The cost of internet to the average Nigerian student is high. This paper has attempted to identify the challenges that confront flipped classroom generally, but particularly for Nigeria. It has also offered ways to meet those challenges. A major argument in this paper is that flipped classroom is too important a pedagogical innovation to be ignored even by Nigeria.

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