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GLOBALIZATION AND ADAPTATION OF UNIVERSITY CURRICULUM WITH LMSs IN THE CHANGING WORLD

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ABSTRACT: *Methodological approaches and efforts towards attainment of excellence in higher education, as the most powerful instrument for social and economic advancement, are undergoing major changes technologically and otherwise. For the university to play a leading role in the ever-changing world of globalization, internationalization, and digitalization; the university curriculum must necessarily be adapted to suit the Revolutionary Information Age that we live in. Learning Management Systems (LMSs) are used all over Higher Education Institutions (HEI) in Europe, North America, South America, Asia, Oceania, and most countries in Africa for the purpose. The need to acquire, know, understand, and actually use LMS in the Third World countries as in the Developed World has arisen and is rapidly increasing aggressively in today's ever-changing globalized digital knowledge economy. Unfortunately however, LMS is not yet in use in any of the universities in Nigeria as a function of lack of information about how LMSs are being used, where and how to acquire LMSs, and which LMSs are the most adopted elsewhere in the world. This research aimed at, and provided the requisite information for universities to easily acquire, develop and use LMSs for effective delivery of higher education to meet the internationalization and globalization needs of the Revolutionary Information Age*.

KEYWORDS: Globalization; LMSs; University curriculum; Changing world; Adaptation; Learning Management System; LMS; Internationalization; Excellence in higher education; Revolutionary Information Age; List of top LMSs.

INTRODUCTION

The term "curriculum" is derived from a Latin word for or "race" or "course" which denotes going through the entire planned teaching-learning processes, encompassing the inputs, transactions, and outcomes by a university for the actual production of an educated person who is skillfully equipped with all that it takes to maximally function in the global digital knowledge economy (Kpolovie, 2016; 2014). University curriculum is the totality of the learning experiences provided by a university (Modebelu, 2015; Holz-Clause, Guntuku; Koundinya, Clause & Signgh, 2015). It includes the entire course contents or subject matter, the methods, strategies and means employed in delivery, and other aspects, such as norms and values that relate

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to the way the university is organized to best benefit from and maximally contribute to knowledge discovery, digitalization and dissemination globally.

The **Subject Matter** deals with three educational components; the general courses, major courses, and elective courses.

General courses: are aimed at instilling knowledge and skills that students can bring to bear in whatever work they eventually choose. These courses are based on the principle that though acquiring facts in a specific area is important, learning how to think critically and creatively in a variety of ways are of greater priority. The general course should broadly cover science, technology, engineering, and mathematics (STEM) on the one hand, and the arts on the other (Hunt, 2011). General courses seek to develop in every student some general skills or approaches to knowledge, and how to engage in the intellectual work of the disciplines in a variety of fields across the arts and STEM.

Major courses: are aimed at adequately equipping a student with knowledge in a particular field of study. They are used for providing a student special opportunity to know a segment of human knowledge deeply, with a sufficient grasp of its modes of thinking and analysis for him to make his own contributions in the specified field of study (The University of Edinburgh, 2017).

Electives courses: are aimed at give a student the freedom to pursue interests that may lie outside his major and that extends beyond those addressed by the General courses. A student may freely choose one or more outside his Major to learn a course that is capable of shedding additional light on his major. A student may volitionally take a course in a field that he has not otherwise encountered.

Curriculum Components

With the abundance of information in the Revolutionary Information Age, university curriculum is bound to consist five pronounced components (Cogburn, 2017; Selwyn, 2011; Spector, 2014; VanTassel-Baska, 2004).

Explicit curriculum: subjects that are taught based on the identified mission of the university, and the knowledge and skills that the university overtly expects students to acquire.

Implicit curriculum: is unintended curriculum that arise from the culture of the university and the behaviors, attitudes, and expectations that characterize that culture.

Hidden curriculum: things which students learn, because of the way in which the work of the university is planned and organized but which are not in themselves overtly included in the planning or even in the consciousness of those responsible for managing the university.

Excluded curriculum: topics or perspectives that are specifically excluded from the curriculum that students will interact with and which could influence them.

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Extracurricular: May include programs sponsored by the university, that are intended to supplement the academic aspect of the experience and activities that the institution and its immediate communities provides.

With the monumental structural changes radically occurring in the processes of production and distribution in the technologically-driven Knowledge Age, occasioned by globalization and internationalization in accordance with demands of the Revolutionary Information Age, a university curriculum must go beyond the five components listed above to indisputably engineer:

i. Breaking of all boundaries of space and time.
ii. Extreme flexibility and agility.
iii. Having the whole world as a single classroom.
iv. Virtual collaborative team work across continents.
v. Endless exploration of abstract concepts.
vi. Making impossibilities possible.
vii. Production of limitless scientifically and technologically equipped personnel.
viii. Sharpening of student's creative, evaluative, and critical thinking.
ix. Extreme enhancement of symbols manipulation abilities.
x. Maximally develop student's research abilities and skills for limitless knowledge discovery.
xi. Equate physical and mental labour.
xii. Develop each student's virtual competencies to perfection.
xiii. Perfect each student's reading and numerical abilities across languages.

CURRICULUM ADAPTATION FOR SURVIVAL & FLOURISHMENT

In both Darwinism (the theory of organic evolution asserting that new species arise and are perpetuated by natural selection) and new-Darwinism (the modern Darwinian theory that explains new species in terms of genetic mutation) show clearly that it is the most adaptable species to change that survives and thrives; and not the strongest nor the most intelligent of species that survives and thrives most (Kpolovie, 2016b). So it is with universities in the global village. It is the universities with curriculum that is most adaptable to change that best survives and flourishes, and not the universities with the strongest nor the most cultured curriculum that will best survive and prosper in the changing world. In the Revolutionary Information Age that we live, only the university that is swiftly adapting to the ever increasingly competitive global market that must unstoppably survive and indeed boom. An adaptive university curriculum aims at and actually ensures that the students make the whole world their classroom, by mainly learning the entire world virtually. This is what the National Open University of Nigeria (NOUN) was set out to do (Kpolovie & Obilor, 2014; 2013; 2013a), but it is yet to frantically do the needful (Kpolovie,

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Obilor & Ololube, 2015) if at all NOUN is prepared for it. The NOUN must start to live up to its expectations; and guarantee the internationalization of the teaching-learning experiences that the faculty and students acquire.

Universities must break neatly from the past and do what the ever histrionically changing world demands. The right universities today will not be preparing their students for the same world that our grandparents, our parents, we went to university to prepare for. Universities today should tailor their programs to the real needs of the core industry, the prospective employers and direct more of their educational resources toward technological, vocational and professional training that the globalized digital knowledge economy demands (Kpolovie, 2012a). In an evaluative work, Kpolovie (2012a, 329) had cautioned on the great need to reform the educational system in Nigeria in line with the globalization, digitalization, and information technology that is increasingly revolutionizing the world thus:

> The future of education reforms in Nigeria on the basis of the Education Reform Act 2007 in the federal gazette, which virtually made such reforms the prerogative of the Minister of Education, with evaluators and researchers playing no roles; is not only bleak, but very bleak, extremely bleak. Only utilitarian revolutionary education reforms can change it. For a blissful future for all Nigerians, driven by educational advancement; Nigeria demands instant radical utilitarian revolutionary education reforms at all levels, university in particular. The most justifiable battle that we must collectively fight for the overall good of all; is the fight to offer every Nigerian, unequivocal right to quality education virtually and the global associated employment opportunities. We must regularly evaluate our education system, using standard evaluation designs; and totally fix it at all cost. Every Nigerian must not only wake up from the wasted decades of mediocrity, despondency and slothfulness that education was relegated to the background; but victoriously fight the onerous battle of acquiring and utilizing quality higher education without any delay, or else risk the imminent irrevocable all-round failure as individuals and as a nation, and suffer enslavement by social, economic, political, scientific, technological, and digital woes.

The university should typically produce agents of change that will transform the world for better in one way or the other. For any university to truly be competitive within the digital global economic environment, its curriculum must provide opportunities for the students in particular and faculty (lecturers) to obtain a global perspective and become global citizens. The university's curriculum must be able to drastically engineer Internationalization. The curriculum of the university should be such that every student and others in the university community majors in just one thing, positively changing the world. The university curriculum must be able to transform

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everyone who passes through it to truly become a functional agent of change, who will actually change the world for better.

Develop in student the capacities for evaluation, critical thinking and interpretation. There is unstoppable need for development of the capacity for critical thinking now than ever because the new digital world of Web 2.0 and the Big-Data is primarily characterized with bombardment of the world with information. The new global knowledge economy that the university must prepare her students and staff for is anchored solely on digital platforms. The university curriculum that can best produce the desired results must itself be based on digital platforms, the best of which is Learning Management System (LMS) (Kroner, 2017; Mesquite & Peres, 2015; Nafukho & Irby, 2015; OECD, 2014). Individuals that can best fit into the new digital world of tomorrow are those trained digitally today and equipped with unfathomable capacity for data-based evaluation and critical thinking (Kpolovie, 2017; Kpolovie, Ewansiha & Esara, 2017). On hourly basis, students are attached to multiplicity of information-generating devices such as tablet, iPad, smartphone, cell phone, iPhone, BlackBerry, and internet-connected laptop. Surfing the World Wide Web, e-mailing, tweeting, sending and receiving instant messages via different applications, and etcetera, have typically characterized both student and work lives (Ololube, Kpolovie & Makewa, 2015; OECD, 2016; 2016a). The immeasurable volume of information that students encounter in the process can be of best use if and only if they are excellently equipped with extraordinary capacities for evaluation, interpretation, and critical thinking. The capacity for interpretation, evaluation, making meaning and making sense out of the abundance of information in the world around us is at the very heart of the liberal arts and fundamental to the humanities, and indeed core to the sciences. Such capacities can best be created with Learning Management System that is an online software platform designed exclusively for university curriculum delivery (MindFlash, 2017; MindWires LLC, 2016) to adequately address the Web 2.0 and Big-Data global knowledge economy (Aparicio, Bacao & Oliveira, 2017).

Make the university education that you offer, a big lucrative global business. University education in the increasingly changing world has since become a global business with the international physical branch campuses that have been set up (The Conversation, 2016). At the fall of 2016, universities have established 458 branch campuses in other countries (Cross-Border Education Research Team, C-BERT, 2016). The United States with 100 and the United Kingdom with 54 are the largest exporters of international branch campuses of their universities across six continents in the world. Russia has 26 university campuses in other countries such as Belarus, Albania and Azerbaijan. While Australian universities have 22 campuses abroad. India has university campuses in Dubai, Singapore and Sydney. Malaysia's Limkokwing University has opened a campus each in the United Kingdom and the United States. In Asia and the Middle East alone, there are 192 branch campuses of Wester universities. These international branch campuses are university educational equivalent of the globalization of business, with powerful universities

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establishing networks of subsidiary campuses. The important question is: How many Nigerian universities have become a multinational corporation by establishing five functional branches in other countries and continents? The obvious answer is an unfortunate none.

The current state of Nigeria universities in the fundamentally changing world is contemptable as they have not started adapting to the globalized knowledge economy (Kpolovie & Obilor, 2013b; 2013a; 2013c). In a world that knowledge is the main driver of the economic growth, a world of revolutionary communication technologies, and of rapidly circulating capital and people, the university has a more paramount role to play than ever before. University education has increasingly become the foundation for social mobility and individual prosperity. To secure gainful employment in the public and the private sectors, university education is required. Even to establish a private company and become the chief executive of a personal company, be it limited liability or an enterprise, university education is needed. In Nigeria, the Corporate Affairs Commission will usually request tendering of university degree evidence for business registration (http://new.cac.gov.ng/home/). In the United Kingdom, universities contribute over 160 billion pounds to the economy in a single year. Nigerian universities require to be repositioned to play similar key economic roles. To achieve such feat, the universities have to attract international students, earn millions of dollars from patents, foreign publications, and groundbreaking research works, ownership of an economically viable company, as well as extraordinary collaboration with the industry.

But in Nigeria currently, there are questions on all of these areas that are begging for answers that do not exist. For instance:

1. How many Nigerien universities that have up to even 1% enrolment of international students?
2. Why are millions of graduates from Nigerian universities roaming the streets without gainful employment?
3. How many universities in the country that earn just ten million dollars from patents in a year?
4. How many universities in Nigeria that have up to 200 text books published internationally for generation of foreign currency in spite of the huge number of professors the institutions?
5. On groundbreaking research, how many universities in Nigeria have even a single lecturer whose academic productivity, known as h-index, is up to 100? H-index of 100 means that 100 or more scholars world-over have cited each of at least 100 of the lecturer's publications on the Internet.
6. How many universities that run engineering programs, for instance, in the country have successfully developed and is running modular refineries to raise internally generated revenue in a national economy that is currently driven by crude-oil?

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7. How many Nigerian universities generate at least 100 million dollars annually from its collaboration with people in the industry?

The answer to each of the above questions in none, no single university in Nigeria. To worsen the case, there exist certain national policies in the country that tend to hinder universities form living up to the expectations captured in the above questions. Such policies demand immediate modification.

The Future of university education lies heavily in the hands of the people in the university system today. We, in the universities today, are the future of tertiary education tomorrow. We can only live up to this challenge by accepting and adapting ourselves to the ever-changing technological and digital world (Lemoine, Yates & Richardson, 2015). We must acknowledge that we currently live in a world of "fake news" with great need for evaluation and critical, informed decision-making than ever. Every field of human endeavor is growing exponentially and changing radically or sharply in very exciting ways – new technologies, new political landscapes, novel problems, new priorities and novel opportunities; and ever-emerging and improving professional standards. Is your institution following the ever-improving technological and all-round trend in terms of service delivery?

University education is an absolute necessity; yet opportunities for such education are unaffordable to a great majority of the prospective students. The more desirous people become of university education, the less attainable it tends to become for them. University curriculum must be designed such that it attracts real money to the institution from the global knowledge economy so that the institution on the principle of need-based assistance, can provide financial aid for students who are exceptionally good to motivate and better encourage demonstration of positive exceptionalism, smart and hard work (Colangelo & David, 2013; David, Rimm & Siegle, 2011; Moore & Lowenthal, 2011; Kpolovie, 2016b; 2012). This is to ensure accessible and affordable university education for all highly talented students irrespective of their economic circumstances. The American unique culture of upward mobility from rags-to-riches on the basis of personal effort and merit must be adopted (Alamieyeseigha & Kpolovie, 2013). Though there persist in this country and in some other countries (developed and developing alike), serious challenges about higher education costs; the focus on university education as the fundamental engine of economic growth must be upheld as it behooves the universities to do all that should be done to actualize their impeccable mandate.

Students have to be made to pay for quality university education. University education is of so much value that it simply cannot run freely as currently captured perhaps wrongly in the 1999 Constitution (FRCN, 1999) and the 2011 Education Reform Act (FRCN, 2011) as well as the 2004 National Policy on Education (FRCN, 2004). The very best experiences that an individual

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in the changing world can get are teaching-learning experiences that university offers. Even the worst set of experiences in real life is not cost-free. The ultra-valuable experiences that universities provide cannot and should not be free to the primary beneficiary, the students. It is however hoped that when Nigerian universities tap fully into and benefit from the very special opportunities that Learning Management System (LMS) offers, the overall cost of education per student will be easily affordable as it shall be seen later in this paper.

There is need for filming and unlimited distribution of courses contents and materials of the universities online. The university curriculum in the changed and ever-changing world should make provision for the filming and unlimited distribution of courses online for people around the globe to easily access and experience the courses in the form of Massive Open Online Courses (MOOCs). In this way, each university course can astonishingly become a worldwide phenomenon for every human who cares to fully learn it, experience it, apply or live it to directly benefit from it (Ololube, Umunadi, Kpolovie, 2014; Mesquite & Peres, 2015; Nafukho & Irby, 2015; Ololube, Kpolovie & Makewa, 2015). However, such internationalization of university courses can only be done with the use of the right technological tools (LMS) that we shall soon examine.

Demolish the brick and mortar walls and free the university to the world. The curriculum must be capable of removing, and actually demolish the brick and mortar walls of the university and free the institution to the world. It must open the university books, discovered units of knowledge and research findings to the global village. It should activate and radicalize the perpetual university spirit of openness, inquiry, critical thinking and access to quality knowledge that fundamentally define the university as ivory tower. Each faculty must increase his/her academic productivity and become a lecturer to all citizens of the Information and Communication Technology-driven Knowledge Age. And let the students who graduate from the university be skillfully equipped with all that it takes to maximally function in the global digital knowledge economy.

Emphasize STEM and Encourage the Arts in the university. The intensely competitive global digital and knowledge economy demands the university to place unreserved emphasis on Science, Technology, Engineering, and Mathematics (STEM) courses while equally encouraging the Arts (Moore & Lowenthal, 2011). For the university system in Nigeria to be worth of its salt, it must be totally committed to or concerned with advancing both technologies and humanities. The language with which technology is communicated and advanced is provided by the humanities. For instance, an individual without skillful reading, writing, and counting abilities can neither contribute much to nor benefit meaningfully from a technologies-driven world. A famous Harvard University President, Professor Drew Faust in 2010 asserted that often, “the most transformatively useful scientific discoveries trace their origins to research works that were born out of sheer curiosity about who we are and how we can fathom the most intriguing mysteries of

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the natural world" (Faust, 2010). The greatest changes in the world are Science, Technology, Engineering and Mathematics- based. But while laying prodigious emphasis on STEM that tends to directly drive economic development and solve urgent novel problems; very serious attention must be paid to inquiry in the arts that trigger critical thinking, build the human perspective, foster unbounded curiosity, nurture restless skepticism, and guarantee our profoundest understandings of existence (OECD, 2016a; 2016). University can only champion worthwhile innovations and discoveries only when the institution is able to nurture the students' minds to imagine a world that is radically different from the current one in which we live. With retrospective demonstrations that the world has been different, could be different, and will actually be different again for better if we do the needful now can motivate the university to greater creativity and productivity. The university has a distinctive obligation to nurture and fulfil the deep human desire to understand ourselves and the world around that was inherited from the smallest elementary particles to the sweep of the galaxies. This special obligation the universities today can best accomplish with the right adoption of technologies.

The curriculum should seek to Balance our Education. Our university system should seek to balance what may be termed liberal and practical education; entrepreneurial and technopreneurial education; STEM and arts education; science and classical education; agriculture and biotechnology education. Biotechnology for instance, is the branch of molecular biology that studies the use of microorganisms to perform specific industrial processes. Biotechnology with its related fields of agricengineering, bioengineering and ergonomics, demands serious attention as it tends to possess much of what could become solutions to man's problems in the changing world in an environmentally friendly manner (Kpolovie & Sado, 2016). Much of existing and prospective health and environmental problems could be solved or prevented with it via genome.

BRAVE CURRICULUM TO CONFRONT THE VIRTUAL WORLD

Universities should float very brave curriculum that is capable of meeting the demands of the radically changing world. Exponential development of new technologies have changed, and will continue to enormously change the world in the way we think, communicate, socialize and do most things. Every new technology brings new opportunities and perhaps new risks. Youths, young men and women mostly at university age, are the greatest users of online services and social networks. University is therefore faced with the onerous challenges of educating and guiding their students and staff through the realities of the virtual world.
The university curriculum has to be designed to adequately meet the needs of modern people living in a world full of opportunities and a world that has suddenly become:

- A small global village.
- Where there is increasingly greater connectivity.

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- Where information is accessed with greatest ease and speed.
- Where knowledge is collaboratively built.
- Center of advanced medical practice.
- Pivot of advanced biotechnology.
- Where existing digital divide must be ended.
- Cybercrime must be prevented or eliminated.
- Cyberwars demand to be stopped.
- Decreasing physical social interactions needs to be addressed.
- Cyberbullying risks demands attention.

There is abundance of available information. University curriculum must be designed to address information availability in the changing world where every needed information is at the touch a button. Merely at the touch of the right button, we can pay our bills, buy the needed goods and services, attend meetings, and watch films, and so on without going outside the comfort of our homes. In fact, every button touched seems to be the right button as each touch produces results that are capable of catching one's attention (Kpolovie & Iderima, 2016; ICEF Monitoring, 2017).

With virtual search via the various search engines (Google, Bing, Dogpile, MetaCrawler, Mamma, etc.) for expert information, better understanding of a plethora of complex information could be got. Abundant information on health, law, engineering, and indeed every profession can be got simply with Internet search. For instance, in countries where data are available, about 80% of those who use the Internet have searched for health-related information in 2016. There is an increasing trend of Internet users becoming much more informed in fields that were once exclusively the domain of experts. The implication is that doctors and nurses, for instance, are much more likely to treat better informed patients and who may challenge the quality, accuracy and authenticity of their prescriptions. Faculty are more likely to teach students who are much better informed of the topic, course, discipline or profession like the cases of uneducated lecturers uneducating educated students (ULUES syndrome) and digital immigrants teaching digital natives (Ololube, Kpolovie, Amaele, Amanchukwu & Briggs, 2013) and the issues of "Digital Native and Tourist" (Ololube, Amaele, Kpolovie & Egbezor, 2012). The general demand in this regard is for the university curriculum to keep improving to adequately cope with the trend.

Online Shopping has become regular practice in the digital knowledge economy era. Over 65% of individuals in the OECD countries for instance have done online shopping (ordered goods and services) from the comfort of their homes. Close to 90% of persons in United Kingdom, Denmark, Norway, Sweden, Luxembourg, Netherlands, and Germany ordered goods and services online in 2016 (OECD, 2016). There is need to prompt the realization that faculty and students in Nigeria do not only have to buy online but should more importantly produce and sell their products online for people world-over to order. When we start working accordingly, a search for

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each lecturer's books on the Internet (e.g., Kpolovie Peter James books) shall show his internationally published books in various online stores such as Amazon.com, Alibris.com, Google-Books.com, Igi-Global.com, ebay.com, Chapters.indigo.com, Kobo.com, Bookmanager.com, books-by-isbn.com, Barnesandnoble.com, and so on.

Online courses and distance education market is booming. The technological advancements have opened up new markets for the education sector that include online courses and distance learning just at the touch of a button. The understanding of teaching and learning have been transformed beyond imagination. At the touch of a button via virtual learning platforms, professors and students effectively interact when they are physically located in different environments.

Every faculty and student should take full advantages of opportunities that ICTs offer. Each professional must on daily basis study and acquire greater knowledge and skills in his field from the Internet. The curriculum must be designed and adapted for adequate preparation of students with the technologies and skills required to take advantages of the opportunities that Information and Communication Technologies (ICTs) offer; such as:

1. Abundance of immediate answers to any question online;
2. Equipment of students with the increasing advanced computer programming skills in addition to basic computer literacy;
3. Self-paced, interactive, and personalized learning;
4. Building of critical capacity to use and to contribute to the ever increasing wealth of information;
5. The dramatic growth in the amount of available information;
6. The ease with which anyone can upload materials and units of newly discovered knowledge;
7. Improvement of lecturers to be better prepared for using and teaching of new technologies;
8. Increasing the benefits and reducing the costs of learning with the ever-growing technology;
9. Development of collaborative models for harmonization of social networking with user-generated Internet sites and the core business of formal learning;
10. Determination of content and monitoring the quality of online educational materials and software that have fast become a great market;
11. Taking responsibilities for monitoring students' time online;
12. Establishment of flexible but consistent system-wide policies and standards in online security;
13. Provision of adequate and appropriate training for recognition of cyber-risks;
14. Teaching of the technical skills for self-protection from cyber-threats;
15. Taking of pro-active stance in encouraging respectful online behavior and reducing online anonymous postings without infringement of freedom of speech and right to privacy;

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16. Taking a stand on the use of brain-enhancement drugs for improvement of concentration, memory and productivity in the tertiary education. This is more so as the super-abundance of information all-round has tended to reduce sustenance of attention on the core business of learning to the extent that the cognitive performance-enhancing drugs are becoming popular (Kpolovie, 2012).
17. Equipment of students with skills and competencies to work in biotechnology sector, such as genome sequencing, development of new uses for nanotechnologies, and mechatronics.
18. Provision of formal cum informal opportunities for life-long learning.
19. Big Data management and maintenance skills. This refers to extremely large and complex data sets that the traditional data processing application software or analog storage is incapable of dealing with. Only digital storage that can be used to handle its capture, storage, analysis, curation, search, sharing, transfer, visualization, querying, updating, and information privacy for predictive analytics to reveal business patterns, trends, and associations that relate to human behavior and interaction.

INTERNET AS INTEGRAL PART OF LIFE

The internet has since become an integral part of our lives, and it shall continue to remain so. This new reality must be addressed by the university curriculum. Internet users are now bound to be online daily with the development of mobile handheld devices like tablets and smartphones (Ololube, Emejuru, Kpolovie, Amaele & Uzorka, 2012). Individuals have typically become more sophisticated in their online activities, and perform multiple activities simultaneously. At the fall of 2016, available data showed that 71% of internet users do so on daily basis (OECD, 2016). The explosion of smartphones, tablets and other handheld mobile devices has allowed users to move with the Internet to wherever they go. In Iceland, Norway, Sweden, Denmark, United Kingdom, Finland, Netherlands, Luxembourg, Japan, Korea, Canada and Germany, over 90% of Internet users use it daily. Such use has raised concerns about decreasing attention spans and increasing FOMO (fear of missing out) syndrome. The university curriculum must take advantage of the Internet technologies, tools and strengths that have typically characterized our social and work lives.

As high as 80% of the world population use the Internet. With improvement in broadband capacity and access across continents and nations, about 80% of the world population use the Internet currently. This percentage is bound to increase in the next few years. In some countries, an average internet users performs up to five to ten activities simultaneously. They could be checking emails, reading online news, communicating with professional or colleagues via messaging services, attending lectures, downloading music, watching tweets, banking, shopping, and so on, all at one time. These activities have compelled an increase in multi-task ability. How the performance of multiple tasks skillfully can be done without decreasing attention spans among

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youths is a special challenge that the university curriculum must address. That is, the curriculum must not only be designed to improve the cognitive, affective, and psychomotor traits, but also the psychoproductive domain as well as multiple intelligences (Kpolovie, 2016b; 2012; Hunt, 2011).

Having an Online presence has become a virtual reality for every one and every company. We live in a virtual world where having an online presence and visibility has become a necessity for universities, companies and individuals (Kpolovie and Obilor, 2013b). A survey in December 2016 showed that 99% of major firms in the world have at least one Website each (OECD, 2016a). There is no single nationally, continentally and/or globally recognized university or any other business organization without its own website. Higher education institutions that are ranked high in Openness, Presence, Visibility, and Excellence have reasonable number of research works, lectures and courses posted on their websites. To attract the attention and visibility that a person or an organization needs demands increasingly more effort, exposure and time spent online in the digital landscape where staying relevant in the public eye is the bread and butter. The time shall come very soon, and indeed now, that every student in the university shall not only have and be known by his/her matriculation number, but by his/her functional website and email address that are derived from those of the university. Without such addresses, the student cannot be able to access and benefit from the enormous wealth of knowledge/information that the institution shall make or has made readily available online. The university curriculum shall be designed to accommodate the virtual reality and digital economy outlook of the change world.

Each university needs to use a functional e-learning platform like LMS to enhance and enrich its curriculum delivery. The curriculum of each university demands to be planned and implemented with a functional electronic learning platform where the unlimited teaching-learning materials, experiences, interactions, and transformation take place. The entire university curriculum is best designed and implemented with Learning Management System, which is currently the top e-learning platform. We are living in a good world in which nothing good is free. If your institution is using a completely free LMS, you have not started doing what the changing world demands. Something urgently needs to be done. Let us now look at what exactly university curriculum development and implementation with LMS in the radically changing world entails.

LEARNING MANAGEMENT SYSTEM (LMS)

Learning Management System (LMS) is a Web 2.0 software for scalable and robust curriculum design, documentation, administration, implementation, tracking, reporting and unlimited access to educational courses or training programmes. Learning Management System (LMS) is currently the climax to which educational technology is applied in university curriculum development and implementation that best suits the briskly changing world, globalization, and internationalisation. With Learning Management System (LMS), a university is able to easily structure and deliver

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teaching-learning materials to students, administer tests and other assignments, follow-up every students' progress, and manage complete record-keeping in physical, virtual, blended, flipped, synchronous, and asynchronous classrooms.

Learning Management System (LMS) can also be defined as electronic-learning software for the planning and execution of teaching-learning experiences interactively and collaboratively to best capture and maintain the students' attention via a wide range of platforms such as Sharable Content Object Reference Model (SCORM), student portal, admin options, tracking/reporting, multimedia hosting, in-app messaging, in-app testing, gamification, mobile accessibility, integration, content library, course or content authoring (content creation) and open-source coding (NSBA, 2011; Paulsen, 2003; Wiley, 2017; And one, Holotescu & Grosseck, 2014; Andrew, 2008; Dalsgaard, 2013; Ingwersen, 2017). Other key features that LMS automatically encompasses are Intellectual Tutoring System (ITS), Competence Management System (CMS), Student Information System (SIS), Virtual Learning Environment (VLE), Learner Record Store (LRS), Learning Activity Management (LAM), and almost all that educational technology in the Information Age stands for (Hyland, Trahar, Anderson & Dickens, 2008).

The various e-learning platforms such as Massive Open Online Courses (MOOCs), xMOOCs, Udacity, Open Distance Electronic-Learning (ODe-L), Distributed Open Collaborative Course (DOCC), Coursera, and edX, can best run with the use of LMS (Ambient Insight Research, 2009; EC, 2000; Kpolovie & Iderima, 2016; 2016a; Tomie, 2013). LMS platforms are not only used in the higher educational sector. Major firms and multinational companies, in fact all the companies in *Fortune 500 list* (Beta Fortune, 2017), use LMS software for easy accessibility by each employee, and to provide immediate, individualized on-line access to the full array of information, software, guidance, advice and assistance, images, tools, and assessments, as well as to monitor systems to permit job performance with minimal support and intervention by other (Edutechnica, 2017; Kinshuk, Chen & Chew, 2016; Kpolovie, Joe & Okoto, 2014; Ololube & Kpolovie, 2012; Parliamentary Assembly, 2008; Ahmad, 2010). Most of the terms mentioned in this paragraph and the earlier one are be highlighted briefly under the features of good LMS (Ingwarsen, 2017) to guide universities in deciding on which LMS it should acquire. The various learning activities that could be done today with the aid of Information and Communication Technology (ICT) are harmoniously incorporated into LMS software. With LMS all ICT-related learning experiences and tools can better be utilized. Such learning technologies and activities include (Kpolovie & Awusaku, 2016; Tomie, 2013):

i. Interactive whiteboard
ii. Web cameras
iii. Videoconferencing
iv. Podcasting

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v. Digital cameras
vi. Digital video
vii. Wikis and Blogs
viii. Digital electronic books (eBooks)
ix. Student response systems
- Turning Point
- mClik

x. Social networking
- Google+
- YouTube
- Dig
- LinkedIn
- Flickr
- Facebook
- Delicious

FEATURES OF GOOD LEARNING MANAGEMENT SYSTEM TO GUIDE UNIVERSITIES' CHOICE

1. **Web 2.0**

Web 2.0 is the second stage of the World Wide Web (WWW) or Internet development that is characterized especially by the change from static web pages (the first phase of the WWW that is retroactively referred to as Web 1.0) to a highly dynamic, interactive, and user-generated content with the growth of social media, allowing greater usability (ease of use, even by non-experts) and robust interoperability (when a website can work very well with other products, systems and devices) that uses big data as the mode of information storage.

2. **Sharable Content Object Reference Model (SCORM)**

These are software specifications that allow cross-software communication. In many industries, these features are mandatory for any LMS used. As such, almost every serious LMS will at least be SCORM compliant. Where SCORM is not, then there must be Experience API (xAPI) that is projected replace SCORM overtime with technological advancement.

3. **Student portal**

Students should have a unique portal or version of the LMS that they see that is different from the instructor or admin portal or view.

4. **Admin options**

You shouldn't need to contact your software's help desk every time you need to make a minor change in the LMS. As such, administrative users should have the ability to access reporting and results, change and update course content, and make changes to student user status, at *minimum*.

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5. **Tracking or reporting**

The details you'll see with results reporting varies widely between software. Sometimes you'll find a detailed data-based system, other times you'll find a more general, graphical reporting style. Find a style that you think will work for you, but know that all software should have this in some form.

6. **Multimedia hosting**

Every single LMS should be able to host images, video, and audio files. Every single one. If the LMS you're looking at cannot do these things, it's outdated. Even the most basic of systems can embed a YouTube link.

7. **In-app messaging**

Some systems go for forums, others go for instant messaging, and others go for intra-mail. Many combine two or more of the above. Figure out what style you'd prefer.

8. **In-app testing and assessment**

Just as your LMS hosts lesson content, it should also support testing functions. If these tests are multiple choice, the software should also offer automatic grading. It will take a lot of pressure off of needing to evaluate your students manually for every quiz.

9. **Mobile accessibility**

What is mobile access? Some users don't mind if there's a mobile-optimized web view of their online system, while others won't settle for anything that is less than a dedicated app that allows the learners to be relying heavily on their smartphones and other handheld devices.

10. **White labelling**

LMS with white labelling allows greater aesthetics showcasing of the institution using it to prevail throughout the learning management software. White labelling is more often found on big-ticket software, but a little tech savvy can make any open source system white labelled, too.

11. **Gamification**

Gamification has become a big catchphrase or buzzword that allows LMS to have elements that can be as pervasive as game-based learning (where the entire lesson takes the form of a game), or as simple as a leader board for the students. Gamification is glitzy, but best done with a gentle touch to make sure you're giving your learners what they really want.

12. **Integration**

Integration is all about how nicely your LMS plays with the other programs you use. Why isn't integration on the main list? Because it's so mutable. Some buyers don't want to need any form of integration, whereas others need heavy compatibility with multiple systems. The most common software integration you'll find in most LMSs is with Microsoft and Google—Office 360, Google Drive and Gmail, etc. Check what integrations you'll need before going LMS shopping so you can avoid getting distracted.

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13. Content library

You may not have time or resources to design 100% of your own content, and you may not have the money to hire a bespoke content designer. That's ok, because content libraries are an awesome choice! Many learning management systems offer content or course libraries built-in, or as an optional add-on. These libraries are full of ready-made content on a wide range of subjects, some academic, some corporate. There's no shame in going for pre-made content, just make sure to review it thoroughly before implementation to make sure the offering suits your needs.

14. **Course authoring**

This is also referred to as content creation that is the design and contribution of one's own content or information to any media, most especially to digital media for an end-user/audience in specific contexts. It is an awesome choice for better self-expression via website maintaining and updating. Some content designers like to use their own software and then upload and retrofit it to the LMS they'll be using. But some designers prefer to make their content in-app to ensure a proper stylistic fit and minimal formatting hassle. An LMS with course authoring tools makes life much easier for these designers and more current for the learner.

15. **Open-source code**

For the more tech-savvy among us, open-source code offers free customization that is only limited by your skills (or your staff's skills) as a programmer. Don't let the word "programmer" scare you off if you're no Steve Wozniak. Many open source LMS options are ready right out of the box, and others are easily customized with a wide array of add-ons.

16. Intelligent Tutoring system (ITS)

ITS is a computer system designed in line with cognitive learning theories with the aim of providing immediate and customized instruction or feedback to learners, typically without intervention from a human teacher. The role of ITS in LMS is to enable learning in a very meaningful and effective manner by using a variety of computing technologies to solve the problem of student's over-dependence on teacher for quality education. With ITS, a Learning Management System is able to reform the entire education system by providing each student access to high quality education by digitally replicating the role of a teacher as it involves automatic problem generation, and automatic intelligent feedback generation.

17. Virtual Learning Environment (VLE)

LMS software provides VLE which is a Web-based platform for the digital aspects of courses of study within educational institutions. VLE is an online education curriculum that allows:

i. Content management – creation, storage, and access to active use of learning resources.
ii. Curriculum mapping and planning – planning of lesson, assessment, and personalization of learning experience.
iii. Learner engagement and administration- managed access to learner information and resources and tracking of achievement.

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iv. Communication and collaboration via email, e-forum, chat, wikis, blogs, notices, twitter, other media, and so on.
v. The entire course syllabus
vi. Course administrative information – prerequisites, credits, registration, payments, physical sessions, and contact with each lecturer (for blende learning version).
vii. Course content – complete course for distance learning applications, or part of the complete content when used as a part of conventional course. It provides materials such as copies of the e-lecture in the form of text, e-books, audio, video presentations, and visual aids.
viii. Additional resources – either in integrated form or as functional links to outside resources, and hyperlinks to create unified presentation to students.
ix. Flexible instruction to students in a manner that is familiar to the current web-oriented generation.
x. Automatic integration of students' learning results, and transcripts into the campus information system.

18. Learning Activity Management (LAM)

LAM is an open source learning system that LMS uses for designing, managing, and delivering online collaborative learning activities. It provides lecturers with an intuitive visual authoring environment for creating sequences of learning activities that include a range of individual tasks, small group work and whole class activity that is based on both content and collaboration.

19. Student Information System (SIS)

SIS is a data management information system within LMS that allows tertiary educational establishments to easily manage student data. It provides for registering students in courses, documenting grading, transcripts, tests results, building student schedules, recording class attendance, and recoding of communications with students. Students' details can be communicated to their parents via SIS. However, course materials, assignments, assessment tests, and staff records cannot be published in SIS.

20. Learning Record Store (LRS)

The LRS is a data store system that LMS uses to as a repository for learning records that are necessary for Experience API (xAPI). It enables learning activities to be easily generated, and recorded in e-learning in the form of Actor Verb Object such as "I did this". LRS is used mainly for to store and retrieve the data that is generated from Experience API statements (individual learners' statements about their experiences in the LMS teaching-learning delivery).

21. Synchronous and Asynchronous Learning

LMS could be used for both synchronous and asynchronous settings. While synchronous learning occurs in real-time, with all participants interacting at the same time, asynchronous learning is self-paced and allows participants to engage in the teaching-learning interaction without depending on other participants′ involvement at the same time. Synchronous refers to the exchange of ideas and information with one or more participants during the same period. The

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traditional face-to-face discussion, online real-time live teacher instruction and feedback, Skype conversations, and chat rooms or virtual classrooms where everyone is online and working collaboratively at the same time are examples of synchronous LMS. It helps students create an open mind because they have to listen and learn from their peers, in addition to fostering online awareness and improvement of many students' writing skills. Asynchronous LMS on the other hand may use technologies such as email, blogs, wikis, and discussion boards as well as web-supported textbooks, hypertext documents, audio, and video. At the professional educational level, training may include virtual operating rooms. LMS in asynchronous settings is highly beneficial for exceptional, particularly gifted students who could progress at their talented pace without being held back by the normal or average students. Students at the lower side if IQ curve can also learn and proceed at their own pace. If they need to listen to a lecture a second time, or think about a question for a while, they may do so without fearing that they will hold back the rest of the class. Students have access to an incredible variety of enrichment courses in online learning, and can participate in college courses, internships, sports, or work and still graduate with their class.

22. LMS is Educational Technology Driven

LMS is driven by advances in educational technology. In fact, use of LMS in university curriculum designing and delivery is the current peak of educational technology. In the changed world of today and the future, planning and delivery of learning in line with behaviorism, cognitivism, and constructivism theories of learning can and is with Computer-based Teaching (CBT) that has increasingly been refined to its best form that is termed Learning Management System (EC, 2000) that operates in a multi-user Web 2.0 virtual environments (Aparicio, Bacao & Oliveira, 2017; ICEF Monitoring, 2017).

For simplicity, Learning Management System (LMS) may equally be defined as a powerful online educational software that most successfully combines managing of complex databases with digital frameworks for managing higher educational curriculum, training materials, and evaluation tools. Modern training needs to be easy and accessible. A learning management system allows for easy creation, distribution and tracking of training anywhere, on any device. LMS allows anyone to create, track, manage and distribute learning materials of any kind. LMS is fast becoming a fifty billion-dollar industry with products and software that enable a university or any other complex organization to develop electronic coursework, deliver it with unprecedented reach and flexibility, and manage its continued use over time. Over the years, Learning Management Systems have been used to effortlessly deliver courseware in tertiary institutions of learning as the best of e-learning platforms in a technology-driven world. Major companies also use learning management systems to deliver training to internal employees and customers (MindFlash, 2017). The technology has become a powerful tool for consulting companies that specialize in staffing and training, and for any corporation looking to get a better grasp on the continuing education of

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its workforce. In the developed world, the impact of LMS has been greatly felt in the higher education industry and in almost all spheres of life in the ever-changing globalized world of Web 2.0 and Big Data digital knowledge economy.

There are close to 1000 LMS platforms that are available for universities and other great organizations to purchase and use. Each institution is required to acquire just one as each LMS is capable of adequately managing the entire curriculum and data of a university in spite of the great diversity of the types of students, faculty, and other staff in the institution (Ololube, Ajayi, Kpolovie & Usoro, 2012). Each LMS is automatically structured to sufficiently internationalize every student who fully passes through it. Common components that each LMS platform possesses are as outlined by MindFlash, 2017 and listed here:

i. *Rosters***:** A digital roll call sheet for tracking attendance and for sending invitations to class participants.
ii. *Registration Control***:** The ability to monitor and customize the registration processes of e-learning curriculum.
iii. *Document Management***:** Upload and management of documents containing curricular content.
iv. *Multiple device access***:** Delivery of course content over web-based interfaces such as desktops, laptops, phones or tablets.
v. *Distributed instructor and student base***:** Remote participation by the instructor or pupil allows courseware to feature multiple teachers or experts from across the globe.
vi. *Course calendars***:** Creation and publication of course schedules, deadlines and tests.
vii. *Student Engagement***:** Interaction between and among students, such as instant messaging, email, and discussion forums.
viii. *Assessment and testing***:** Creation of varied knowledge retention exercises such as short quizzes and comprehensive exams
ix. *Grading and Scoring***:** Advanced tracking and charting of student performance over time.
x. *Automatic enrollment***:** Logic within an LMS which registers and reminds employees for mandatory courses.
xi. *Enhanced Security***:** Many corporate LMS solutions have single sign in, advanced authentication and firewalls to ensure data security.
xii. *Whitelabeling***:** The ability to create online training content that aligns with a company's unique brand.
xiii. *Multi Lingual Support***:** In a globally distributed company, many employees or partners need training in their native languages. A corporate LMS allows training in multiple languages.

Use of LMS for curriculum delivery has since become a global phenomenon that distinguishes analogue conventional universities that are dwelling in the far past, as they are lead by the corpse

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of a dead system, from the contemporary universities that are living up to the demands of modern day globalization, internationalization, digitalization, and technology-driven Revolutionary Information Age of e-everything. In the knowledge economy that we live, university curriculum planning and implementation is simply done with the use of Learning Management System. With the adoption of LMS in the United States, Online university course enrollment has since increased over 30% (Alamieyeseigha & Kpolovie, 2013). Ambient Insight Research (2009) revealed that at the fall of 2009, more than 44% of post-secondary students in the United States were taking some or all of their courses online. The research also predicted that the percentage of such online courses registration was going to rise above 81% by 2014. This projection was actually attained as reported in Education at a Glance 2015 and 2016 OECD Indicators by the Organization for Economic Corporation and Development (OECD, 2015; OECD, 2016b; 2016a). Research universities and a significant majority of for-profit higher education institutions in the US offer online courses delivered with LMS software. They have also properly trained their faculty in understanding of the content area and in use of computer and the Internet to work with students online. LMS based programs have significantly expanded Stanford University, Princeton University, and Massachusetts Institute of Technology (MIT), Harvard University, University of the People, University of Liverpool, Walden University, and so on, that offer classes to a global audience. In 2016 alone, 58,000,000 worldwide students enrolled in Massive Open Online Courses (MOOCs) (ICEF Monitoring, 2017; Dayan, 2016). In Nigeria however, investigations of learners' readiness for MOOCs in 2016 revealed that no institution in the country is having LMS platform that offers MOOCs, but that the National Open University of Nigeria (NOUN) and a very few universities are rather attempting to offer xMOOCs programs (Kpolovie and Iderima, 2016; 2016a). The implication is that universities rather than students in Nigeria are not ready for MOOCs as they are yet to possess Learning Management System for their curriculum designing and delivery.

ADVANTAGES OF LMS

The use of Learning Management System in university education has numerous advantages as indicated by various research works. LMS technology has remained the most pervasively and thoroughly entrenched technology that drives university curriculum design and implementation to enable the university educational system play the most leading role of radically changing the world for better (Ahmad, 2010; Aparicio, Bacao & Oliveira, 2016; 2017; Bardford, Porciello, Balkon & Backus, 2017; Kpolovie, Iderima & Ololube, 2014). Learning in tertiary education in the changing world is based majorly on Learning Management System. Through the use of LMS, university curriculum can easily be individualized for each learner such that it better differentiates and allows the students to work for mastery at their own pace (Holz-Clause, Guntuku, Koundinya, Clause & Singh, 2015). The use of LMS can improve access to both degree and postgraduate programs in university (NSBA, 2011; Council of Europe, 2008; Electronic School, 2011;

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Edutechnica, 2017; Kpolovie, Oshodi & Iwuchukwu, 2016; Hyland, Trahar, Anderson & Dickens, 2008; Kpolovie & Awusaku, 2016). It will make the rich learning materials available and accessible to distance learners and to a much wider audience. Students usually learn much more in less time when receiving LMS-based lectures; and they like classes more and develop more positive attitudes toward computer-based classes as in LMS (Electronic School, 2011). With LMS, students can independently solve problems; and there are no age-based restrictions on difficulty level, as students can learn at their own pace (Dalsgaard, 2013). Generally, the use of educational apps has positive effect on learning. Aparicio, Bacao & Oliveira (2016) found that with the use of e-Learning anchored on LMS in university contexts increases productivity and allows learners to accomplish their tasks in more effective ways. Economically, the LMS market generated well over $59 billion in 2016 as forecasted by DOCEBO (2014). Far from any attempt of replacement, Learning Management System (LMS), that took the center stage of electronic educational advancement over 20 year ago, keeps recording more and more tertiary institutions on monthly basis that use LMSs than ever before.

Convenience of Use: LMS is the most convenient technological tool for tertiary educational praxis in today's digital knowledge-driven economy. A better way for delivering transformational teaching-learning experiences with great ease as LMS does not exist, and when such may be discovered is not at sight. Kroner (2017) asserted that usability convenience is the single largest factor for the success of LMSs as they are the default option for every university that is living up to the demands of the ever-changing world. With the use of LMS, courses and enrollments are auto-populated, almost magically, at the start of every semester. LMSs log in with the same password used for every other campus system, and new user accounts are set up automatically. LMS provides inbuilt training and readily available online support services for the users (staff and students). For total security, LMS simply requires nightly backing up for it to be brought back in case it goes down. Some schools even pre-populate the final grade from the LMS back into the SIS eliminating even more manual work for each instructor. LMS enables each faculty to easily perfect course contents over a short period of time with up-to-date information. When the semester is over, the perfected contents is rolled over and copied into the next semester, again with just the click of a button. There is no better way for simplification of a lecturers' work than the use of LMS.

User-Friendliness: LMS is most user-friendly, and thus meets the students' demanding expectations that are driven by consumer technologies that have high levels of usability, versatility, and user-friendliness. Just with an e-mail, LMS allows a student to use it daily. LMS provides one place to log in to see everything that a student or an instructor needs to do in a week, month, semester, or academic session; specifically a single view into all notifications/alerts, grades, and assignments. The LMS technology is an all-embracing one, such that with it, there is no need for any other or additional software. LMS is so versatile, robust, and scalable that with it

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a student can maximally gain from every learning experience that the university offers. A student can very easily use LMS at his most suitable moment or time to fully cover learning experiences that he missed when it was first launched. Such flexibility makes LMS an incomparable option for both instructors and students.

High Integrative Connectivity: Several universities that use LMS can with a touch of the button get interconnected. Institutions have refined and perfected the integration and connections of their LMSs into a wide variety of other campus systems in areas such as systems authentication, identity management systems, student information systems, assessment-related learning tools, library systems, digital textbook systems, and other content repositories. Over time it has become much easier and more common to connect LMSs to several dozens of other systems seamlessly. The integration has made the utility of LMSs much more than they have out of the box – and also more "stickiness" that causes them to become harder to move away from.

***Copyright Laws Compliance*:** With the exception of openly licensed Open Educational Resources (OERs), LMSs limit the visibility of copyrighted course content to only course participants for the duration that they need it. This is to ensure compliance with copyright laws. LMSs also ensure that only a given student can see his or her grades, and some LMSs have the ability for system administrators to configure which student data is shared outside the LMS with other systems such as digital courseware and e-textbooks. LMSs such as Geenio, Blackboard, Moodle, Instructure, and D2L offer tremendous support for improving accessibility of course materials to comply with accessibility laws, sometimes offering tools that allow instructors to automatically check their course content to make sure that even students with sight and hearing disabilities can use it effectively. Where needed, LMSs enable instructors to provide details about the required course materials long ahead of the class start date to improve textbook affordability by giving students more time to shop around globally online for relevant materials.

LMS can cope with the next generation OERs needs: Learning Management System alone has appropriate response to the coming wave of diagnostic, adaptive products coming from the publishers and technology developers. LMS is robustly designed to cope with the next generation open educational resources (OERs) because LMS is interactive, simulative, really rich with multimedia that are combined with open assessment resources (OAR) that drive diagnosis, remediation, and adaptation. In fact, LMS is not only providing funding for, but is also the actual driver of the next generation of open educational resources for universities. The millions of dollars required to move university curriculum development and delivery from where it currently stands in terms of relatively static openly licensed content, to the next generation of touchscreen cum voicescreen (handheld devices with screen that automatically hears and translates voice into written form, and sees and transmits written information into voice form) super interactive, simulative, and multimedia user-friendly higher education software will be provided by the

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today's 100 billion dollar worth LMS market. With the steady swift growth of the LMS industry, the great brains that the industry is producing and the booming fund that the industry is generating, there is no limit to which LMS-based universities will contribute to the ever lightening global change for better.

No going back on LMS usage: No student or faculty uses LMS and would wish to go back to traditional curriculum delivery due to the special real benefits that LMS platforms offer. Imagine two versions of a given university course. In one version, students go home after class, do their homework on paper, and then bring it to class and turn it in. Then seven days or one week later, when the teacher finishes grading the scripts, he returns the papers to the students in class for them to ascertain whether they understood the assignment and wrote the right thing. If some students did not, what are they to do now? Then in the other version or the second scenario where LMS is used, the students do the homework in an interactive online system that automatically grades each practice problem instantaneously and provides each student with immediate feedback about his performance. For a wrong response, the system also offers a wide variety of possible right responses. Will the students possibly prefer the traditional setting? No of course. It is the LMS scenario that every talented and serious student will stick to for learning. Now, also imagine as a faculty, that you have to manually grade your students' scripts with perhaps the aid of a machine or assistant instructors within seven days in the traditional method as is the rule in many such universities. In the second scenario, the students' work is automatically graded by the interactive multimedia software, and you simply view their LMS-generated reports to ascertain areas that the class is succeeding and the areas that the class has challenges that are yet to be surmounted. Touching a button offers a variety of possible solutions to the pending challenges. A faculty who uses the LMS setting is not likely to opt for going back to adopt hand-grading method as in the conventional approach to university curriculum delivery. No matter the cost of having university courses run on LMS, the online platform that provides immediate feedback to students and frees up faculty for more engaging uses of their time, no user of LMS will desire to revert back to use of the conventional method of curriculum delivery in the ever changing world.

Immediate feedback: It is little wonder that Wiley (2017) argued that providing immediate feedback to students' supports their learning better than feedback that comes only after lengthy delays, if at all. Yes, providing faculty with a more detailed view of what students are struggling with can help them make better use of time in class. Freeing up faculty from grading so they can spend more time interacting with students online is good for both faculty and students. Indeed, algorithmically generating practice opportunities as made possible with LMS so that students can get all the practice they need is better for learning than having 50 or 100 problems at the end of a book chapter or a class.

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Standardisation of academic programmes: Use of LMS contributes greatly to the standardisation of programmes of study, which is particularly relevant with regard to the introduction of modularised study programmes under the framework of the Bologna Process. Each academic programme is designed and enriched to better compete favourably with other similar programmes globally. Common quality standards and mutual recognition are ensured at both the American and European levels such as the framework of the Lisbon Recognition Convention and of the Council of Europe and UNESCO. Aptly, LMS guarantees the production of internationalised graduates.

Greater flexibility: LMS ensures that the individual needs of students are better met because of greater flexibility that it guarantees. With LMS, a university can better reach out to employed part-time students as well as students living in remote areas, the countryside or abroad. People in hospitals or in detention centres could equally benefit from academic programmes of the university. Of great importance, students with disabilities or special needs, who could have otherwise been excluded, can also have access to assisted education of the university through e-learning.

Improvement of learning experiences: LMS supported e-communities of students that will profit from team collaboration, the opportunity of participating from a geographical distance, storage possibilities of work outputs and the sharing of information. This may lead to better study conditions and greater success in studying. In general, e-learning resources improve the learning experience of students.

Enhancement of communication: LMS can enhance efficiency in the areas of support and communication, information retrieval, interactive learning, virtual seminars, study exercises as well as administration. Communication with students online may not only increase the quality and efficiency of the services provided, but also lower their costs. A further effect is increased transparency.

Creation of digital library and OERs: LMS supports the creation of open educational resources (OERs) accessible to everybody on the Internet. LMS academic contents may also become part of a digital library and resource centre.

Facilitates acquisition of double degrees simultaneously: LMS facilitates international co-operation of educational institutions, creates special opportunities for successful running and completion of double degree programmes as well as virtual studies abroad.

New opportunities for employers and learners: Use of LMS for university education opens up new opportunities for employers and learning industries. Employees have to be trained continuously. There will be greater demands for electronic-learning services both at the

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commercial and in-house levels. Due to the widening of access to education associated with LMS, the financial cost of continuing education, life-long education formally and informally for people and companies will become less.

UNIVERSITIES IN THE UNITED STATES OF AMERICA THAT USE LMS, MARCH 2017

LMS has and will continue to remain the best technology that guarantees that educational experiences are not merely transactional; but rather transformational to keep changing the world for better. LMS is the best educational technology solution for use in the swiftly changing world. It is little wonder that a significantly overwhelming population of colleges and universities in the United States of America depend on LMS in their curriculum design and delivery as tabulated, listing the LMSs with number of universities using each, and the number of student enrollment in each LMS. The table also shows that a total of 3,676 universities and 19,739,783 student enrollment in the 2017 Spring in the United States. Blackboard Learn sued by 1185 (32.24%) universities and 7,383,086 (37.40%) students is the most adopted LMS in the United States. Blackboard is respectively followed by Canvas, Moodle, D2L, Sakai, Pearson, and ANGEL. There are several other LMSs that are used by 494 universities and 1,420,744 students in the US as at the first quarter of 2017.

Table 1: United States collages and universities' use of LMS by March 8 2017

S/No	LMS in Use	Number and Percentage of Institutions Using	Spring 2017 Enrollment of Full Time Students
1	ANGEL	34 (0.92%)	124,679 (0.63%)
2	Blackboard Learn	1185 (32.24%)	7,383,086 (37.40%)
3	Canvas	713 (19.40%)	4,773,367 (24.18%)
4	D2L	360 (9.79%)	2,314,816 (11.73%)
5	Moodle	678 (18.44%)	2,611,762 (13.23%)
6	Sakai	107 (2.91%)	757,643 (3.84%)
7	Pearson	105 (2.86%)	353,686 (1.79%)
8	Other	494 (13.44%)	1,420,744 (7.20%)
Total		**3,676 (100%)**	**19,739,783 (100%)**

EUROPEAN EXPERINCE OF LEARNING MANAGEMENT SYSTEM LMS

The origin of LMS in Europe is simply given here. The Parliamentary Assembly of the Council of Europe recalled that the development of e-learning tools as demonstrated in "Telekollage" in 1967 by the regional ministry of education in Germany collaborating with public broadcasters; and in the Open University in Milto Keynes (Great Britain) that offered courses from 1971, as

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well as the Fern-Universitat in Hagen (Germany) in 1975 that had considerable impact on education and training employed e-learning It also noted that such tools as LMSs are not yet used to their full potential for the benefit of education in Europe (Parliamentary Assembly, 2008). E-learning tools are electronic means of teaching and learning in classrooms and outside at a distance, either individually or in a collaborative way, as well as in a blended format of classroom and distance studies. E-learning, encompasses a wide range of electronic means for educational transaction and transformation that includes audio-visual tools used in classrooms and go as far as interactive Internet-based collaboration of students and teachers as done with Learning Management System (LMS). Open distance learning may feel the strongest impact of such tools, which can easily help to overcome geographical distance; and offer access to learning subjects for people with disabilities.

The Resolution to use LMS by Parliamentary Assembly of the Council of Europe was a bold step in the right direction. At the end of a summit that lasted for many days on higher education curriculum development and delivery on February 11, 2008, the Parliamentary Assembly of the Council of Europe (Parliamentary Assembly, 2008) made very serious and cogent conclusion that Europe needs to immediately enact and enforce laws that will drive her universities to acquire, develop, and deploy Learning Management Systems (LMSs) in the delivery, revitalisation, and transformation of easily accessible quality education. It asserted that the development of e-learning tools (LMS) has had considerable impact on education and training; and lamented that such tools are not yet used to their full potential for the benefit of education in Europe. The Assembly emphasized that educational institutions should be equipped with the technical infrastructure and LMS software and co-operate between themselves in order to create synergies. The faculty should be trained and awakened to know how to most effectively apply the new electronic resources for teaching and communicating with their students. It asserted that the education ministries must be able to evaluate study periods of e-learning and degrees so obtained. LMS also offers new opportunities for vocational training, continuing education and in-house company training, and has the potential to be a powerful means of creating open educational resources accessible to all and thereby counteracting a divided knowledge society.

LMS should be used to fill knowledge gaps that traditional or conventional university curriculum has left unfilled in the swiftly changing world. The conventional classroom-based university education cannot sufficiently prepare students for the challenges of the changed and ever-changing world of today and tomorrow. Modern societies are faced with greater student mobility, flex-working times, replacement of linear professional careers by sequences of working and learning periods, the growing parallelism of work and family obligations, and the penetration of new media and communication services into all areas of life. New means of disseminating and acquiring knowledge and skills through LMS can offer more adequate solutions to those demands and circumstances of the digital knowledge economy.

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The Assembly call on everyone to support use LMS in the universities. The Assembly invited the European Ministers of Education to actively participate in the Bologna Process and the Universities of Europe, in particular through the European University Association and the European Association of Distance Teaching Universities, to develop common approaches to LMS in the European higher education sector. It noted that LMS is capable of offering new opportunities for vocational training, continuing education and in-house company training; and that to be competitive on a global scale, European employers and employees have to invest continuously in technology development as well as information communication knowledge and skills acquisition. Education should not exclude people and companies due to high financial costs. Therefore, the Assembly called on member parliaments to consider supporting vocational training and in-house company training because use of LMS in universities could be a powerful means of creating open educational resources accessible to everybody, thus counteracting a digital divided knowledge society. The Assembly called on member parliaments to support the Open Source Movement that was established for software development and initiatives for open educational resources that are available and freely accessible on the Internet. The Assembly made a special case for further funding by the European Union under its programme for the effective integration of information and communication technologies in higher education and training systems in Europe. It welcomed the support for lifelong learning and student mobility in accordance with earlier recommendations of the European Parliament and the Council of the European Union on acquisition of key competences by all for lifelong learning and on transnational mobility within the European Community for education and training purposes of 18 December 2006.

Students and faculty should have more direct access to the technical devices and study contents and know how to positively use them for their own studies and communication requirements. This demands technical training of both faculty and students in the use of the new technological and communication software and hardware that abound in today's global world of Web 2.0 and Big Data as online solutions. Faculty should be educated to be skilfully knowledgeable in how to apply the new electronic means of teaching and communicating with their students. Training courses on LMS utilization should be organised for the faculty with a view to making them obligatory in the future. Such training can equip them to better cope with the challenges of technological know-how that the global digital knowledge economy poses to the major stakeholders of the university system (the institution, university management, students, faculty and other staff, parents, the immediate and wider societies, the industry, and the labour market). Educational institutions should be equipped with the technical infrastructure and software and co-operate between themselves in order to create synergies. Teachers should be aware and know how to apply new electronic means of teaching and communicating with their students. Teacher training courses on e-learning should become obligatory. Students should have access to the technical devices and study contents and know how to use them for their own study and

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communication requirements. This requires early training of students in the use of new online communication tools.

European universities responded affirmatively without delays. The universities in Europe responded positively to the call such that at the fall of 2016, data collected revealed that Learning Management Systems (LMS) are now used all over Higher Education Institutions (HEI) in Europe just as obtainable in the United States of America and other developed nations (MindWires LLC, 2016). In 2003, only 113 universities were making use of LMS in the delivery of education (Paulsen, 2003), but at the fall of 2016, all the 1,604 universities in Europe were actively utilizing LMS in their curriculum designing and implementation (MindWires LLC, 2016) to cope with the needs of the changing world. Adoption of LMS by European universities became a ready solution for their emerging new needs as the societies were faced with greater student mobility, flexibility of working times, the replacement of linear professional careers by sequences of working and learning periods, the growing parallelism of work and family obligations, and the penetration of new media and communication services into all areas of life in the radically changing global village. Each of the 1,604 universities in Europe adopted one LMS for the development and delivery of its curriculum as tabulated. It can be seen with greatest ease from the table that Moodle is the most used LMS (1,043 out of 1,604 universities) Europe at the first quarter of 2017. Moodle is followed by respectively by Blackboard Learn, Ilias, Sakai, Claroline, Itslearning, GUNET eClass, Stud.IP, Olat, Canvas, D2L Brightspace, ClassFronter, and several others.

Table 2: Percentage of European universities that used a given LMS

S/No.	Learning Management System	Number of institutions	Percentage
1	Moodle	1,043	65
2	Blackboard Learn	192	12
3	Ilias	64	4
4	Sakai	48	3
5	Claroline	32	2
6	Itslearning	32	2
7	GUNET eClass	32	2
8	Stud.IP	32	2
9	Olat	16	1
10	Canvas	16	1
11	D2L Brightspace	8	0.5
12	ClassFronter	8	0.5
13	Others	80	5
	Total	**1,604**	**100**

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LIST OF TOP LEARNING MANAGEMENT SYSTEMS - LMSs

The final part of this paper is presentation of a list of 373 major LMSs software and their functional links for interested universities and businesses in Nigeria, African, and perhaps other parts of the world to possibly contact and acquire for their curriculum development and delivery as necessitated by the changing global reality of what I have termed Revolutionary Information Age. The listing is done in terms of available research, guides, and infographics as well as the most popular, most affordable, most user-friendly, and other necessary features in 2017 that each of the LMSs has (Capterra, 2017). There are hundreds of LMSs in the market but the LMSs herein are strongly recommended for their relative advantages currently.

Table 3: List of top LMSs

S/No.	Name, owner and Description
1.	**Geenio** by Geenio is a cloud-based platform created for people who want to build e-learning process for company internal or external project from the scratch with the least efforts and pain. Here you will get built-in editor that helps to create interactive e-learning courseware without requiring anything else but your browser. Everything you need to manage the education project in one modern and clean web-based application. It is an all-in-one learning management and course authoring software.
2.	**Blackboard | Education Technology & Services** by Blackboard Inc. is a virtual learning environment and course management system with a Web-based server software that features curriculum development and implementation, course management, customizable open architecture, and scalable design that allows integration with student information systems and authentication protocols.
3.	**Moodle** by Moodle is a free online learning management system, providing educators around the world with an open source solution for e-learning.
4.	**CANVAS** by Instructure is the most usable, customizable, adaptable, and reliable learning platform with 99.9% uptime for universities.
5.	**Edmodo** by Edmodo remains the Web-based system that provides content sharing, real-time feedback, communication tools, and classroom management for the higher education industry.
6.	**Oracle Taleo Cloud Service** by Oracle is fast, easy, and affordable talent management solutions that enable workforce quality improving and leadership pipeline building.
7.	**BirdDogHR** by BirdDogHR provides a learning solution designed to develop students, employees to improve their engagement and increase productivity.
8.	**iCohere Unified Learning System** by iCohere is a Unified Learning System that feature rich, all-in-one platform for Webinars, Courses, Conferences, and

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	Communities.
9.	**LearningStone** by LearningStone provides training for professionals with an instant, online platform for instructor led training groups.
10.	**Blue Sky eLearn** is a multi-Path LMS by Blue Sky eLearn a very powerful cloud-based solution to educational content management, designed specifically for lecture-based learning.
11.	**Totara LMS** by Totara LMS develops open source learning technologies to manage, develop and connect people.
12	**Qintil** by Qintil, a beautiful, easy to use and effective Learning & Compliance Management System with a Marketplace and portable Learning Records.
13	**Capabiliti LMS** by Veritec is highly configurable enterprise learning management solution.
14	**EduBrite** by EduBrite Systems an Online LMS that allows businesses, training institutes to provide end-to-end training solutions to their employees, partners and customers.
15	**Arlo Training & Event Software** by Arlo allows you to manage a single event to complex repeating events and conferences. It automates all tasks you once did manually.
16	**ProProfs LMS** by ProProfs Simple, affordable and integrated SaaS learning management system for online training and education.
17	**Schoox** by Schoox is a mobile, social eLearning platform that supports course creation, knowledge sharing, collaboration, and training.
18	**Grovo** by Grovo Learning empowers the digital workforce with a truly simple end-to-end training solution that delivers the best results in the shortest time.
19	**Matrix LMS** by CYPHER LEARNING, an LMS for businesses that makes it easy to create great courses that learners will enjoy anytime, everywhere.
20	**LearningCart** by LearningCart is an eCommerce enabled SCORM LMS that lets you easily deploy and sell access to web based training or any digital file.
21	**BlueVolt** by BlueVolt, an eLearning solutions company for channel-driven organizations that value learning as a strategic asset for growth.
22	**Didacte** by Didacte sell courses and trains employees and students of any institution that keys-in. Build your courses in minutes and start sharing your expertise. Yes, it's that simple.
23	**JoomlaLMS** by JoomlaLMS is a multifunctional Learning Management System with a variety of useful online training tools for instructors and learners.
24	**LearnerNation (LN Smarter People Smarter Companies)** by LearnerNation is a cloud-based e-learning software that enables organizations to create and deploy learning and training initiatives.
25	**ScriptoPro** by ScriptoPro, a Web-based test maker that helps educators and

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	trainers develop and deliver tests and quizzes online.
26	**Chamilo** by Chamilo Association, an open source learning management and collaboration system that supports simultaneous working and learning.
27	**eloomi** by eloomi combines learning management (LMS) and continuous performance management in a flexible cloud based software platform.
28	**NEO LMS** by CYPHER LEARNING is an LMS for schools and universities that makes it easy to create great classes that students will enjoy anytime, everywhere.
29	**Exceed** by Intellum is LMS that allows you to assign and track online courses, ILT and create certifications.
30	**Kannu** by Kadenze is a platform designed to foster user interaction, engagement, and long-term knowledge retention.
31.	**TraCorp LMS** by TraCorp, an automated LMS for administrators to track employee progress, manage course registration (online, classroom, and webinar), and more.
32.	**SkillPort** by Skillsoft, an easy-to-use features and a simple-to-navigate user interface; provides learners a quick and uncomplicated gateway to training.
33.	**BrainCert** by BrainCert, is the easiest way to learn, teach, and collaborate online.
34.	**Scholar LMS** by BitKea Technologies is a robust and affordable cloud based managed LMS that is free for start-ups and non-profits. Ready within minutes of signing up!
35.	**EasyCampus** by Educadium, an affordable cloud-hosted learning management platform for nonprofits and trainers. Course creation, support and integration options.
36.	**Kokm** by iWise2ebusiness is a Digital workplace integrating work and learning. Work smarter move faster anywhere, anytime on any device. Your office in your pocket.
37.	**Saba Cloud** by Saba Software helps people grow and succeed with an industry-leading Learning Management Solutions.
38.	**Thinkific** by Thinkific is an all-in-one platform that empowers experts & teachers to quickly create and deliver stunning courses on their own sites.
39.	**EDUHAPPY** by EDUHAPPY is a School LMS designed specifically for Education. Have your own LMS in minutes once you create Live account. Start 14-Day Free trial Now.
40.	**Sakai CLE** by Sakai is an Open source LMS for schools that handles announcements, assignments, calendar, gradebook, tests and quizzes.
41.	**tessello** by Brightwave Group is an award winning collaborative learning platform for business. Connect your employees to the knowledge they need.

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42.	**GO1 LMS** by Go1, a fully-featured solution that performs internal training, manages training content, builds community, and monitors training & certification.
43.	**Academy Platform LMS** by Growth Engineering with the mission is to make learning fun again. How? By using gamification and social features to supercharge learner engagement.
44.	**Collaborator** by Davintoo Ukraina is the web-based tools for eLearning and staff development. User Management, eLearning Environment, Communication Tools, & Knowledge Base.
45.	**WestNet MLP** by WestNet Learning Hosted LMS for 100 to 100,000 users, flexible payment options, built-in authoring tools.
46.	**Evolve Learning Manager** by Evolve Technologies is Learning management system that includes automated assignments, test builder, classroom management tools, and ecommerce capabilities.
47.	**eAmida** by Amida Learning Consulting is the collaborative e-learning platform that makes life easier for your company. Intuitive, Engaging & Complete.
48.	**Edbrix** by Edbrix is a collaborative, communication, and management content using a platform based on Google and Microsoft productivity tools.
49.	**edoola** by edoola is a device agnostic white-label Learning Management System.
50.	**Opigno LMS** by Connect-I is a Drupal-based LMS qualitative, scalable, enterprise-ready, and free LMS.
51.	**StudyCloud** by StudyCloud is a Cloud based solution for engaging students. Features include flexible scheduling, live chat, file/video management and grading.
52.	**Teachable** by Teachable allows you to create your own course website and control your branding, student data, messaging and pricing all from one place.
53.	**Thinking Cap LMS** by Thinking Cap enables organizations to deliver eLearning and ILT courses to learners and provides robust tracking of learner and class performance.
54.	**Aziksa Learning Platform** by Aziksa is a Co-branded learning portal, Virtual classroom with chat and desktop share, Personalized lab for knowledge production with e-learning.
55.	**Forma Lms** by FormaLms is Open-source eLearning platform focused on corporate training needs such as integrability, automated tasks, talent management.
56.	**Pathgather** by Pathgather, A social, employee-driven LMS that helps discover the best learning content, share achievements, and collaborate with coworkers.
57.	Relaxo by Relaxo, students of Relaxo create their own outlines from class notes, case/text books, study groups, and review sessions.

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58.	**TrainingRelief** by TrainingRelief, allows organizations of any size to easily build training courses online and distribute to own employees. Branded to your organization.
59.	**Entrenar.se** by Entrenar, is a learning management software that is redefining the concept of enterprise training.
60.	**ISOtrain** by Softek Export Proactively manage your company training requirements, empower employees maintain their qualification and certification status.
61.	**JLMS** by JZero Solutions, is a multi-tenant or single instance LMS. SCORM compliant with full branding ability. Mobile capable.
62.	**Brainshark** by Brainshark, Quickly launches and manages on-demand web-based training and elearning initiatives and track the progress of learners and groups.
63.	**Relias LMS** by Relias Learning, Relias solution is a hub for all your corporate training content, management, and tracking needs.
64.	**360factors** by 360factors Improve training effectiveness and reduce the risk of noncompliance with Learning Management Software.
65.	**Chalkup** by Chalkup, is a free LMS that integrates seamlessly with Google and prides itself on being easier to use than anything else on the market.
66.	**Cloudschool** by Cloudschool is a free, personal, cloud-based LMS for teachers and instructors. It's the easiest way for anyone to create and deliver course content.
67.	**Coggno** by Coggno, is a robust and sophisticated learning management system with an extremely uncomplicated user interface.
68.	**Learn-Wise** by Magnifi Group, is a highly customizable and intuitive LMS that allows organizations worldwide to deliver online training.
69.	**LMS** by TRAINING ONLINE is Cloud based FREE e-Learning platform/software for online education of your employees or students. No monthly fees or initial licences.
70.	**MOS Chorus** by MOS – MindOnSite, is a 100% web-based, SCORM compliant, agile, fully customisable (graphic & features), rapidly deployed, easy to interface LMS/LCMS platform.
71.	**Online Orientation** by Comevo, is an interactive online orientation software for students, employees, and volunteers for education, corporate, and non-profit.
72.	**Prodeceo** by Prodeceo is a Blended learning system that supports creation of interactive content, mobile learning and unified student records.
73.	**Solid State LMS** by Solid State Learning, is a simple and reasonable hosted learning management system with an intuitive interface, SCORM 1.2 and 2004 compliance and online reports.

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74.	**Worldclass** by Worldclass, Create, publish and sell courses directly to your own branded web and mobile apps.
75.	**XUCore LMS** by xucore, is LMS solution provides cutting edge mobile learning and virtual training.
76.	**CourseMill LMS** by Trivantis, makes the delivery, management, tracking and analytic of online learning across your organization easier and more affordable than ever.
77.	**Create Online Academy** by Create Online Academy is Cloud-based Online Academy Building platform that allows education service providers to create their own e-teaching solution.
78.	**Flipick** by Flipick, provides an integrated LMS that caters to self-paced, real-time, and collaborative learning ecosystems for training & development.
79.	**LearnwithGuru** by Arche Education, is Cloud Based Learning Management System (LMS) platform for Institutes/Teachers/Colleges.
80.	**UpGraduate LMS** by UPGRADUATE is a mobile friendly solution for training management. Features include extended enterprise, partner management, & online training.
81.	**Valamis** by Arcusys, is a Learning Experience Platform, which enables formal learning as well as social, informal and phenomenon-based learning.
82.	**Composica** by Composica is HTML5 based authoring solution for interactive e-Learning content and real-time collaboration.
83.	**SkillBuilder LMS** by BaseCorp Learning Systems has a SkillBuilder's competency-based Learning Management System (LMS) lets you easily deliver, manage and track your learning activities.
84.	**Atum-KFP** by StratBeans Consulting is a portable solution with online/offline access, content distribution, reporting tools, email\sms alerts for tablets and laptops.
85.	**ClipTraining LMS** by ClipTraining, tracks employee training and examination by user, location or course.
86.	**Coursepath** by Coursepath, helps companies create their own interactive courses with the training platform Coursepath: easy and intuitive learning.
87.	**e-doceo learning manager** by e-doceo is a powerful learning content publishing and learners' monitoring solution which price adjusts to the number of trained employees.
88.	**EDUonGo** by EDUonGo is an easy to use and staff with RTO know how!
89.	**EduWave** by ITG America is an integrated learning management and student information system for K-12 and higher education.
90.	**eLearning Impulse** by balesio is an eLearning Impulse uses an intelligent capturing technique for single screenshots that can then be edited as slides.

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91.	**eNyota LMS** by eNyota Learning is a company focused on providing learning solutions to organizations worldwide.
92.	**eXact learning LCMS** by eXact learning solutions supports instantaneous, company-wide collaboration for the creation of critical learning content.
93.	**FOX** by Britannica Knowledge Systems, enables security, response forces and regulation compliant enterprises to assure proficiency of personnel.
94.	**Frontline Professional Growth** by Frontline Education, is a comprehensive solution for managing K-12 employee evaluations, coaching and mentoring, professional development and more.
95.	**Kedzoh mLearn** by Kedzoh is a learning platform allows mobile creation and sharing of mini-lessons to enable on-the-go learning anytime/anywhere.
96.	**Kornukopia** by Kornukopia, is a free Software as a service LMS that helps schools manage attendance, grades, events, share files, share discussions, create groups.
97.	**LearnCube** by LearnCube, is an Online Language School in a box -Live online classes, self-paced courses, inbuilt proficiency tests + more. Use your logo and brand.
98.	**LearnDash** by LearnDash, is a WordPress LMS plugin that instantly transforms any WordPress site into a viable learning management system.
99.	**LearnerWeb** by MaxIT, is a learning management solution designed to fit around your needs. Fully configurable to your custom specifications.
100.	**Learning Suite 360** by 360training.com, is an All-in-one solution for all your online course development. Our LMS and LCMS makes course creation simple and fast.
101.	**LMS King** by King Products, is a Joomla built LMS system with a suite of components like chat, forum, file sharing, etc.
102.	**Meridian Global LMS** by Meridian Knowledge Solutions, offers a learning management system that makes delivering, assigning, managing, tracking and reporting on training effortless.
103.	**MindScroll LMS** by MindScroll, allows organizations to create, deploy & assign learning content in few clicks and easily manage their learning needs.
104.	**NuVarsity** by NuVarsity, Creates courses and evaluates student performance. Course and classroom management in one solution.
105.	**RomyLMS** by Romy LMS, is an intuitive and affordable LMS optimized for use with small to medium businesses.
106.	**SEQTA Software** by SEQTA Software, SEQTA is an intuitive, all-in-one LMS that unites teachers, administrators, students and parents within a collaborative ecosystem.
107.	**SimplyDigi LMS** by SimplyDigi.com, Gives any entity, the ability to operate

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	their own state of the art, branded, 100% web-based online learning portal, affordably.
108.	**TargetSolutions** by TargetSolutions, is the most powerful web-based training management system for public entities.
109.	**Total Talent Management** by PeopleFluent, is PeopleFluent's Mirror Suite that provides unified talent acquisition, talent management, diversity and contingent workforce solutions.
110.	**TrainingToday** by BLR, TrainingToday Enterprise gives you the power to customize courses to best meet your organizations specific standards and practices.
111.	**TutorOx** by TutorOx , Create and author lessons, assessments, and courses, all online. No limit, low-cost LMS for businesses of all size.
112.	**Unius Learning** by Unius Learning, provides a cloud learning management system for the education and corporate sectors.
113.	**Trellis** by Learning.net, is an easily-customizable user interface and an administration/reporting system with standard reports that will meet all common needs.
114.	**Virtual Training Assistant** by RISC, Learning management suite to manage courses delivery, requirements tracking competency assessment and compliance management since 1992.
115.	**Capabiliti** by Qustn, is a SaaSbased Learning & Engagement platform for remote stakeholders - available on mobile and web. Used by companies of all sizes.
116.	**NuCLO** by NuVeda, is an LMS to deliver learning content and ensure learning transfer as well as business and behavioral impact to the organisation.
117.	**TopScholar** by TopScholar, An easy to use, powerful cloud based LMS designed for K-12 and higher education that includes Test Prep and thousands of pre-loaded state specific content.
118.	**Virtual Learning Platform** by Grokworx Software, is a Virtual learning platform that provides everything you need to provide hands on technical training and readiness.
119.	**Talentsoft** by Talentsoft, puts employees professional growth at the heart of your companys HR processes with flexible, cloud-based applications.
120.	**BRAVO! Response** by C3 SoftWorks, Creates and delivers powerful games and quizzes for the classroom, eLearning and web conference sessions.
121.	**SumTotal Learn** by SumTotal Systems, Provides a framework for e-learning, reporting, certification management and compliance tracking.
122.	**Jenzabar eLearning** by Jenzabar, Develops creative learning spaces that engrosses students and offers more dynamic, engaging learning environments.

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123.	**.LRN** by .LRN Consortium, is a suite of applications for web-based learning communities. Provides gradebook, e-commerce, homework dropbox, collaboration tools, etc.
124.	**Abara LMS** by Abara LMS is a modern, mobile-first LMS for businesses, training and eLearning companies.
125.	**Academe Suite** by Ampletrails, is combination of LMS, attendance management, video lecture delivery, and institute management system modules.
126.	**AcademyMaker** by X-CELL, Learning content management solution that combines course authoring with LMS and document management.
127.	**Acadeo** by Elqoo, This blended learning system focuses on great student experience and interaction.
128.	**Acumen LMS** by Acumen Technologies, is a powerful, robust LMS solution for integrated enterprise learning management.
129.	**AdrennaLearn** by Adrenna, is a Web-based system that provides e-commerce, reporting, branding, SCORM compliance, curriculum management for professional development.
130.	**Adventus LMS** by Metalearn Services, An e-learning platform with pre-course and course management, community and data capture tools, assessments, evaluation, etc.
131.	**Alumn-e LMS** by Alumne Elearning, Fast, smart, social LMS with ecommerce solution.
132.	**Alurna** by Ultima Risk Management, Delivers cost effective awareness training courses direct to an organisation¿s end users.
133.	**AMVONET Suite** by AMVONET, Interactive educational network and platform that includes e-learning management, authoring, and collaboration tools.
134.	**aNewSpring** by aNewSpring, Creates, curates and delivers blended learning that adapts to each individual with our learning platform.
135.	**Appdopt** by Appdopt, Helping your employees understand technology.
136.	**ASCENT** by AEROSTUDIES, Complete web-based training system / lms for aviation workplaces.
137.	**Aspire LMS** by The Training Factor, Aspire LMS is a Learning and Content Management System that allows you to train and track corporate learning.
138.	**Astute eLearning Platform** by DeltaNet International, Astute takes the pain out of learning administration. Teams love its learner-centric design, automation, and integrated 360-degree assessments.
139.	**AtHand Learning System** by AtHand Solutions, A complete online learning solution includes a server, courses, and an LMS with an unlimited user license.
140.	**Augie** by Shris Infotech Services, is Online Learning and Assessment software

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	with features such as multi-language support and question categorization.
141.	**Aura eStore** by Aura Innovative Technology, A user-friendly, modern LMS that easily integrates with any AMS.
142.	**Authica** by All Roads, An engaging and insightful learning management and gamification solution that makes employee training simple.
143.	**AVANTI E-training System** by Allantra Learning Technologies, is a complete web-based training system and learning management system (LMS) for workplaces.
144.	**Axonify** by Axonify, is the world's first Employee Knowledge Platform, leveraging brain science and observations on the modern workplace.
145.	**BigLMS** by BigLMS, Based on Harvard & MITs Open edX, it also includes a Hierarchy which enables drill-down reporting & Learning Paths, and Globalization.
146.	**BlueOceanBrain** by BlueOceanBrain, Web based training solution to help your organization drive growth and improve employee performance.
147.	**BoxesOS** by Epazz, All-in-one: Web Portal, Content & Document Management, Learning Management, Online Community, Knowledge Management, Collaboration.
148.	**BrainX** by BrainX, Web-based talent management system used by corporate trainers to improve employee performance.
149.	**BrandLX** by SightWorks, is a mobile-first cloud LMS with just the right mix of out-of-the-box features and customization options.
150.	**C1-HRD** by Nishiyama Intellectual Components, Elearning platform that has been developed to respond to various global companies' training needs to promote employee growth.
151.	**CampusCruiser LMS** by CampusCruiser, A customizable cloud-delivered service for designing and delivering classes.
152.	**CareerMap LMS** by Nexlearn, LMS solution with events management, reporting, course requests, and training data organization for government and corporate entities.
153.	**Caucus** by CaucusCare, Web-based eLearning and discussion platform, that allows to keep a history of lessons and conversations that are at once easy to use.
154.	**CD2 Learning** by CD2 Learning, offers the only complete, cloud-based solution with LMS, CMS, built-in content authoring tools, gamification, & social collaboration.
155.	**CellCast Mobile Learning** by OnPoint Digital, CellCast is the industry's most sophisticated and mature offering for enterprise mobile learning creation, delivery and management.
156.	**Centerline LMS** by Centerline Health Systems, Learning management system

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	for healthcare organizations.
157.	**Circle LMS** by Trismax, Training, certification, and performance management system for onboarding and compliance training.
158.	**Claromentis Learning Platform** by Claromentis, Create and manage intranet e-learning materials, courses, and assessments.
159.	**Clintra** by Zonopact, Highly flexible and customizable business management suite with inbuilt social intranet. Features include CRM, timesheets and invoices.
160.	**Cloud Assess** by Cloud Assess, Web-based assessment platform enabling trainees and students to take part in assessments on mobile devices.
161.	**Collaborize Classroom** by Democrasoft, A free online collaborative education platform that allows students and teachers to engage in an online learning environment.
162.	**Collective University** by Collective Innovation, Collective University is a cloud-based platform that organizations can use to create their own online university.
163.	**CompanyLMS** by CompanyLMS, The CompanyLMS training delivery platform provides organizations a detailed and user friendly platform to manage and deliver training.
164.	**Competency Manager** by CABEM Technologies, Goes beyond the capabilities of a traditional LMS. Create training programs, replicate organizational structure, and view risks & gaps.
165.	**Conductor** by Sage Island, LMS for curriculum development and design, employee education training tracking, scheduling, student registration, reporting, etc.
166.	**Course Control** by Xaurum, Classical training, on the job, coaching, elearning Training paths, certifications, trainer planning, quality management.
167.	**Course Toolkit** by Psychologist World, Feature-rich web-based learning platform for creating online courses and tests, and managing students.
168.	**CourseStage** by Web Courseworks, CourseStage is a mobile-responsive Learning Management System (LMS) designed to support professional development initiatives.
169.	**Coursina** by Horizzon Information Technologies, Easy to use LMS to instantly create Online Training Programs & Deliver eLearning content.
170.	**Coursmos LMS** by Coursmos, Leading-edge training solution that enables your company to efficiently train employees and build a modern corporate learning system.
171.	**CypherWorx** by CypherWorx, At CypherWorx, we love building new ways to learn on the web. Well work with you to make sure your members and employees.

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172.	**Digital Learning software** by Tarams, Custom digital learning solution for K-12, higher ed, professional education & organisations with advance analytics & integration.
173.	**e-Learning Ba-PRO** by BA-PRO, SCORM compliant e-Learning with exam function and student tracking, ideal for corporate university / education.
174.	**e-Mentor** by Neovistas, Learning Management System for designing, creating, enrolling, administering, and evaluating the learning of workers.
175.	**Eadbox** by Eadbox, Empowers B2B companies to create and launch their own online courses and webinars, for scaling their customer success process.
176.	**eCampusPro** by Aptek Technology Solutions, LMS platform that enables you to launch an effective and low-cost eLearning solution.
177.	**ED Global LMS** by AJ Square, On-demand ED Global LMS solution allows quick and easy connection with any popular browser.
178.	**Education Gateway LMS** by MIT Professional Services, A comprehensive Learning Management System solution for schools and colleges.
179.	**EduClass LMS** by Intoweb Business, Elearning application that provides remote course management, training records storage, online assessment, multimedia integration, etc.
180.	**Edukey** by Edukey Education, is an All-in-on eLearning solution perfect for the education sector.
181.	**EDUNIO** by PREVENT, Easy to use, web-based, SCORM compliant eLearning tool for corporate training.
182.	**elcomCMS** by elcom CMS, Elcom delivers intelligent & personalized website, intranet & portal solutions to over 1 million end users.
183.	**eLearning Platform** by WebBased, eLearning platform allows you to easily manage, deliver and track eLearning for everyone in your workforce, anywhere at any time.
184.	**ELIS** by Remote-Learner, Moodle-based Enterprise Learning Intelligence System that amplified Moodle's assessment functionality.
185.	**Elli** by Learning Evolution, A hosted, turn key solution that can include certified canned content.
186.	**emTRAiN LMS** by emTRAiN, A SaaS solution that manages registration and assignments, schedules reminder emails, provides reporting, webinars, SCORM courses, etc.
187.	**eNetLearn** by eCom Scotland, eNetLearrn allows for easy and effective delivery of training courses and material, available 24 hours-a-day, 7 days-a-week.
188.	**Engrade** by Engrade, An LMS for K-12 schools that helps manage daily classroom activities and supports 3rd party integrations.
189.	**Enhance LMS** by Enhance Systems, A modular system with CD/DVD version

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	that provides classroom management, needs analysis, coaching monitoring, succession planning, etc.
190.	**ePILOT** by RDC Solutions, Learning solution designed for use in highly regulated process environments where site/job-specific knowledge transfer is required.
191.	**Epiphany Learning** by Epiphany Learning, A learning relationship management solution for the creation of learner profiles & paths, digital portfolios, and SMART goals.
192.	**Essens** by MOCH, A simple and user friendly interface, mobile friendly, and available in 24 languages. This LMS also offers rapid deployment.
193.	**EthosCE LMS** by DLC Solutions, A full-featured, hosted learning management system with advanced features for continuing education and training.
194.	**EVALS** by EVALS, Cloud-based mobile platform: Digital Evaluations, Digital Tracking (Taskbooks & OJT), Digital Forms, and File Storage.
195.	**EverCam** by FormosaSoft, In Taiwan, more than 70% of people rely on EverCam to create their e-learning videos.
196.	**eZ-LMS** by eLearningZoom, Web-based application with Skype integration, users management, self-service course registration, reporting, testing/assessment tools.
197.	**F2F Video Education Solution** by RANK CONSULTANCY, Live Education, live interactions & collaborations between Universities, Schools, Colleges, Professionals, teachers, students.
198.	**Feathercap** by Feathercap, Create an engaging learning experience your audience will love. Upload videos, images, text, web page links and Tin Can courses.
199.	**Finalsite LMS** by finalsite, Easy to use LMS that connects students, teachers, and parents. Includes messaging, calendars, resource folders, quizzes, & assignments.
200.	**Firefly Learning** by Firefly Learning, Makes it simple for students, teachers and parents to create, share and learn. The learning platform/LMS trusted by leading schools.
201.	**Frontline Data Solutions** by Frontline Data Solutions, Powerful customization & automation tools for management. Intuitive, user-friendly application for employees.
202.	**Fuse Universal** by Fuse Universal, Cloud-based learning solution designed to support continuous, social, mobile and blended learning.
203.	**Genius SIS for Virtual Schools by** Genius SIS, Web-based student information system for online/virtual and blended schools.
204.	**glo** by Digits Industries, create brilliantly simple customised learning

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	experiences using its years of expertise and the innovative learning platform of glo.
205.	**Global Teach** by Swissteach, Global Teach is a comprehensive LMS software with a wide range of configuration features to adjust to specific customer requirements.
206.	**GraspLink** by Viaro Networks, A fully hosted e-learning service with online support. Plans include a free account with unlimited courses.
207.	**Growth Instruments** by Growth Instruments, Consultancy & development company focused on solution-driven transformation & cost-sensitive technology.
208.	**Hifikids** by Hifikids, is a Cloud based LMS with a suite of physical class engagement products & a line of test prep business with content development capability.
209.	**HigherL LMS** by HigherL, Web-based LMS with timesaving course tools, assessment tracking, large content repository for educators, publishers, and corporations.
210.	**iCampus360** by Learning Technology Partners, a Cloud based portal for smaller schools that combines SIS, CRM, and LMS systems into one integrated environment.
211.	**ICAS Corporate Training System** by Strive Software International, Controls the process of managing training and knowledge resources within the organization.
212.	**ICE Global Learning System** by WSI, A full featured LMS totally customizable with an optional SCORM compliant module.
213.	**iLearnPro** by iClassPro, iLearnPro is an online, mobile friendly learning management software designed to simplify staff training for your business.
214.	**ILIAS** by ILIAS, Can be a simple course player, a complex authoring tool, or a full-fledged collaboration platform - for any number of users.
215.	**impaKt LMS** by FCS Software Solutions, AICC and SCROM compliant multi-lingual training management system that can be customized for a variety of industries.
216.	**In2itive LMS** by In2itive Business Solutions, Enterprise SCORM Compliant Learning Management System. Begin your e-learning journey with minimum risk and minimum capital outlay.
217.	**Infinite LMS** by Infinite Media, it is a SaaS LMS designed for SCORM compliant courses.
218.	**InformaOne** by Informa Systems, Offers live and online content management, tickler system support, policies, surveys, and media-rich learning creation capabilities.
219.	**Instancy Learning** by Instancy, An integrated LMS/LCMS that can manage,

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	evaluate, plan, and deliver learning programs for educational institutions and businesses.
220.	**intraLibrary** by Intrallect, Digital repository and learning content management system.
221.	**INX +LMS** by INX Software, Simplifying your training and assessments through an easily accessible and easily maintained online solution.
222.	**iPedago EVOLUTION** by iPedago, is eLearning based on collaboration through a simple interface that supports learning, training, micro-learning and performance support.
223.	**iQity e-Learning Platform** by IQ Innovations, Enables public high school students to receive instruction & learn via computer in a web-based online environment.
224.	IQxCloud by IQStrategix, An award winning, enterprise-class eLearning, eMentoring, organizational knowledge transfer solution.
225.	**itslearning** by itslearning, itslearning is a cloud-based Learning Management System that connects people with passions, ideas, and each other.
226.	**Janison LMS** by Janison, A fully hosted system that creates and deliver courses, provides reports, certificates, and assessments, tracks learners, etc.
227.	**K-LMS** by KESDEE, SCORM compliant LMS that can streamline an organization's training programs, making training convenient and effective.
228.	**KAI-ISPYT** by KAI-ISPYT, KAI-ISPYT is a great and a simple solution for the construction of your own learning environment.
229.	**Kallidus LMS** by Kallidus, Allows you to deploy, manage, track and report on all types of learning across multiple devices.
230.	**KMx** by Knowledge Management Solutions, Distributed learning platform with content development, learning management, performance management and learning content management.
231.	**KnowHow** by The KnowHow Hub, The KnowHow LMS is a dynamic, intuitive, and easy-to-master e-learning & training suite geared to engage learners and deliver results.
232.	**Knowledge Centre LMS** by Acteon, A cloud hosted portal to automate onboarding, conquer compliance issues, and train employees all in a single platform.
233.	**Knowledgebaze** by Gobito, User friendly learning management system that is designed to cover your training development and learning needs.
234.	**Knowledgelink** by Knowledgelink, is a cloud-based, SaaS digital learning platform for speakers, consultants, trainers and large corporations.
235.	**KnowledgePortal360** by T|Factor, Complete solution to manage all training and create content.

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236.	**Learnbeyond LMS** by Learnbeyond, An eLearning solution that offers schools, orgs, and govt. the ability to create, manage and deliver learning programs and assessments.
237.	**Learnbubble** by Elmstone Systems, A compelling and cost effective solution to organisations who are unhappy with their current solution or not yet using e-learning.
238.	**LearnConnect** by Learning Seat, This learning management system helps organisations assign, manage and monitor their online training programs.
239.	**Learner Management System** by Enterprise Training Solutions, Training solution that provides multiple options for user communication and compliance training management tools.
240.	**Learning Management System** by e-Learning Consulting, Manage the delivery of self-paced, e-learning courses and track a learners' activities for each course with online reports.
241.	**240. Vowelearning management system** by Vowel Learning Solutions, Vowel LMS does much more that provide a learning platform - it facilitates pronounced learning.
242.	**Learning Manager glo** by Coloni, designs and develops digital learning, then provides the facilities to both host and support it via its Learning Platform glo.
243.	**Learning Planet** by Tata Interactive Systems, Start Saving with an intuitive and feature-rich LMS that enables learning on the go.
244.	**learningCentral** by Netex Knowledge Factory, Multi-channel LMS compatible with eXperience API Launch all online, onsite and blended courses and obtain detailed tracking reports.
245.	**LearningFox** by LearningFox, Allows organizations to customize quickly, launch courses with minimal cost or IT support.
246.	**LearningServer** by IntraLearn Software, Scalable enterprise e-Learning software; enables corporations to offer individual e-Learning platforms.
247.	**LearningSpan LMS** by LearningSpan, Comprehensive solution that allows for configuration of training curricula and tracks learners' progress.
248.	**LearningSphere** by WDR, Simplifies and streamlines the administration and running of your organization's learning and development events; fully customizable.
249.	**LearningZen.com** by LearningZen, LearningZen.com is a revolutionary, low cost, easy to use online training platform.
250.	**LEARNSOFT** by Learnsoft Technology Group, A web-based, modular LMS with on-line scheduling, registration, testing, transcripts, and reporting tools for all forms of training.
251.	**LearnSOFT LMS (LLMS**) by Logiciel Software Tech, Web-based language

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	learning solution for corporations and institutions with controling tools for trainers and multimedia support.
252.	**Learntask** by Learntask, Online employee training course creation service that supports text, audio, and video content, quizzes, and completion certificates.
253.	**LearnTrack** by Productivity4you, Web-based LMS & training management system with personalised learning environment, assessment and progress reports, discussion tools.
254.	**LearnTrak LMS** by 24x7 Learning LearnTrak LMS is simple to use, on cloud and mobile allowing administrators and employees to seamlessly access learning anytime.
255.	**Learnyst** by Learnyst, Learnyst provides Branded Online Teaching Apps to sell courses & mock tests. We are shopify for education.
256.	**Lectrio** by Lectrio, Online LMS-as-a-Service. Mobile friendly. Free to educators globally with a cost effective subscription plan to organisations.
257.	**UniServity** by UniServity, View Profile is an easy-to-use, safe and innovative online learning space that¿s friendly and flexible enough for learning at any age or stage.
258.	**lift** by Agilis, is a learning management application to help your employees request and run internal workshops. Mobile and desktop options.
259.	**LightSpeed VT** by LightSpeed VT, is a web based interactive training and communication platform offered as a SAS with rich video content.
260.	**Likno LMS** by Likno Software, is a SCORM supporting LMS with content authoring, assessments & tests, scheduling, skills gap analysis, etc. for education and business.
261.	**Linways LMS** by Linways Technologies, delivers solutions for learning infrastructure that enables educational organizations to boost the quality of education.
262.	**LMS by TutorPro**, is a TutorPro that is the original cloud-based LMS. The LMS and its content creation tools, are flexible, modular, and client-driven.
263.	**LMS by Classroom24-7**, a Learning Management Solution with features such as eCommerce capabilities, back-end admin tools, and education compliance technologies.
264.	**LMS Skills Optimiser** by Salmat, is an Online learning and assessment management system; manage content, learners, trainers and administrators.
265.	**LMS365** by ElearningForce, Learning management system developed specifically for the Microsoft SharePoint server and Microsoft SharePoint Online.
266.	**LMSPro** by Planmetrix, is a web based learning management system designed to meet all your organizational training needs in a cost-effective manner.

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267.	**LoudCloud** by LoudCloud Systems, a Cloud-based system that provides class management, assessments, course builder, grade book, and more for K-12 and higher education.
268.	**Luceli Systems LMS** by Luceli Systems, An Online learning management system, SCORM 1.2 compliant, easy to use, easy tracking.
269.	**Lumesse Learning Gateway** by Lumesse, Cloud-based LMS, offers control delivering and managing blended learning programs, all of which are easily configurable to your needs.
270.	**MasteryNet LMS** by Mastery Technologies, MasteryNet offers employee cloud-based training services. The MasteryNet LMS **launches** and tracks all your online training.
271.	**Mediasphere RTO LMS** by Mediasphere Holdings, a system with course creation, assessment, and delivery tools, as well as workflow management for registered training organisations.
272.	**Medworxx LMS** by Medworxx, Supports development, management and delivery of classroom and online learning, with reporting and compliance tracking.
273.	**Melon LMS** by Melon, a system with multilanguage support, user-dependent interface, curriculum and assessment management, corporate intranet integration.
274.	**MeLS** by MeLS, A hosted training platform which offers affordable online training to organisations, and employees, wherever and whenever it's needed.
275.	**Memopulse** by Memopulse, Simple yet powerful tool aimed to empower employees to be more knowledgeable and share better information.
276.	**MiLMS** by Mindtree, An LMS solution offered on a SaaS basis. Supports blended learning as well as virtual classrooms and SCORM and AICC elearning.
277.	**Motivis Learning** by Motivis Learning, Evolve beyond LMS with a Learning Relationship Management System.
278.	**MSAS LMS** by ModalLogic IT Systems, MSAS LMS is a low cost Cloud Hosted Enterprise Learning Management System. MSAS LMS is SCORM 1.2 Compliant.
279.	**My Learning** by My Learning, VLE/LMS software for primary & secondary schools. Packed with learning tool. Used internationally by state & private education sectors.
280.	**mycito** by MYCITO, Coordinate, track and report on all classroom and practical training from small in-house courses to large academic certifications.
281.	**MyClasses** by HotChalk, Free LMS automates daily teacher and student activities and provides a safe, secure, online environment for interaction.
282.	**MyHYPERTrack** by TrainNow.net, Subscription-based LMS and information management tool with online/classroom training delivering and tracking, testing,

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	and surveys.
283.	**myLearningPointe** by Netsmart Technologies, Comprehensive e-learning solution. Allows organizations to leverage technology to train staff. More than 400 courses.
284.	**MySkillCamp** by MySkillCamp, MySkillCamp is the next digital learning generation taking off the social barriers. Be part of a revolution and of a B2B community.
285.	**NaMaYa** by NaMaYa, Fully customizable, cloud-based professional development platform delivers feature-rich training materials via any web browser.
286.	**NavitusLMS** by Navitus Education, Award winning Learning Management System automating Learning & Development processes for large enterprises.
287.	**NetExam** by NetExam, LMS for Channel Partner-driven businesses to train Partners and Customers.
288.	**Netop Learning Center** by Netop, Can be easily integrated with existing systems and enables organizations to build, administer and report on courses, and more.
289.	**NextThought** by NextThought, LMS designed to improve learner engagement, collaboration, and performance through a mobile and flexible solution.
290.	**NovoEd Learning Platform** by NovoEd, NovoEd is the learning platform for the modern workforce. Deliver more engaging learning experiences and transform your business.
291.	**Oasis LMS** by 360Factor, Oasis is a highly configurable LMS, suitable for organization of any size, with variety of educational focus.
292.	**OLAT** by OLAT, Web-based open source LMS for sizable academic institutions. Available in several languages.
293.	**OMI LMS** by Organization Metrics, is a SaaS LMS that can be scaled to meet the needs of hundreds of users or the needs of a large enterprise with tens of thousands of users.
294.	**OmniSocial Learning** by Mzinga, it bridges the gap between training for business and certification requirements and social learning for developing workforce talent.
295.	**On Web Learning** by Web Transitions, Online training and student management system designed for trainers, teachers, HR departments and schools.
296.	**OnLineTng.com** by Inservice Tracking, A LMS with your domain name/ your hosting. Your classes in PowerPoint converted to Flash are SCORM compliant on your site.
297.	**Open e-LMS** by e-learning WMB, Open source learning management system

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	designed for business by business.
298.	**OpenLearning Platform** by Open Learning Global, Online learning platform based around the principles of student autonomy, diversity of learning materials, and social interactivity.
299.	**Owl School** by Owl School, Organize your courses and specify the order of your course elements so your students will learn in exactly way you want it.
300.	**PalmLeaf** by Comviva Technologies, A comprehensive smartphone-led learning solution designed to match modern-day learning needs & challenges.
301.	**PALMS** by Intermezzon, Helps you with both Learning & Performance. It also measures the effect and shows the efforts that actually produces results.
302.	**Percolate LMS** by Michaels & Associates, A cloud-based Top 50 LMS - Manage & take courses on any device - Simple to use - Flexible, custom tagging system - Quick set up & start.
303.	**Performance Management System** by Cognology, Fully featured online Performance Management Software package also optimised for mobile.
304.	**Powerful LMS** by Powerful CMS, Drupal-based solution with social media integration, certification, messaging tools with autoresponder, optional customization, etc.
305.	**ProgressBook Suite** by Software-Answers, K-12 administrative software suite features grade book, SIS, IEPs, parent/student portal, online learning (LMS) and data analysis.
306.	**Qafie LMS** by Qafie Software, SaaS based multilingual LMS that works on open source technology, suitable for universities and corporations.
307.	**RCampus** by Reazon Systems, Web-based L.M.S. for K12 and Higher Ed with an integrated collaborative learning community.
308.	**ReadyTech LMS** by ReadyTech, Training solution designed with features such as public chat, engagement monitors, and more.
309.	**Reflection Software** by Reflection Software, LMS focusing on Enterprise entities.
310.	**RightTrack** by Right Reason Technologies, Streamline the way you create, deliver, and manage the entire training process.
311.	**Room 21** by Super Star Learning, An Online Social Learning Platform where all the members of the learning community become engaged in the 21st century learning process.
312.	**Roundtable Online Learning LMS** by Roundtable Online Learning, Our customizable LMS and custom eLearning course design services tie your learning directly to business metric improvement..
313.	**SABE Extend** by SABE Extend, Cloud-based Extended Learning Platform. Create, share and track online learning content with your critical people.

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314.	**Saras** by Excelsoft Technologies, Provides a secure environment in which to operate a Learning Management and Assessment Management System.
315.	**Savv-e Central** by Savv-e, The fast, innovative and hands-on way to create your own inspired elearning modules.
316.	**School Loop** by School Loop, A learning management system for professional learning communities. Easy to use, School Loop helps kids stay on track.
317.	**Schoolbag** by Learning Data, Virtual Learning Environment (VLE) and e-dairy for students allowing teachers to assign homework to students.
318.	**Schoolbox** by Alaress A virtual learning environment (VLE) for K-12 schools. Its a unique all-in-one learning management system (LMS), portal and intranet.
319.	**scormLMS** by scormLMS, An LMS solution that offers variable pricing structure based on your company functionality requirements.
320.	**SDMS V Staff Development** by SDMS, Staff development, training and LMS covering training planning, course administration, costings and employee development.
321.	**Shift IQ** by Insite Information Systems, Shift iQ is a flexible cloud-based, mobile-friendly skills development learning management platform to increase productivity.
322.	**Simplify LMS** by Simplify LMS, Comprehensive cloud-based learning management system, perfect for small to medium sized businesses.
323.	**Skillato** by Alittleb.it, Skillato allow to train employees¿ knowledge and soft skills.
324.	**Skills Tracker** by FISDAP, Documents student learning, reports achievement and growth, and aids program accreditation and self-study.
325.	**SLATE LMS** by Workplace Answers, Hosted LMS system with reminders and reporting functionality, and the ability to create multiple learner groups.
326.	**SmartSolve** by Pilgrim Quality Solutions, Comprehensive solution for ensuring employee job quality by managing personnel skill sets/certifications.
327.	**smartup** by smartup, Create, share and exchange interactive content for a learning experience thats fun and collaborative.
328.	**Soft Academy** by Soft Academy, Stand Alone Software system that provides content sharing, real-time feedback, classroom management for education industry.
329.	**StudentsAchieve** by SRB Education Solutions, Offers a wide variety of services to help with your implementations including training, Report Card consulting, and more.
330.	**Studytube** by Studytube, An intuitive, flexible, all-in-one Learning Management System to develop courses to automate the training of your workforce.
331.	**Swift eLearning Solution** by Swift eLearning, Swift is an emerging e-learning

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	services company providing technology-enabled eLearning solutions to the organizations across the globe.
332.	**Synapse** by Maerix, Synapse helps build training plans, sessions, as well as keep track of employee's certification history.
333.	**Synergy LMS** by Edupoint, LMS designed to automate classroom management, exam creation, analytics, and more.
334.	**TalentFirst** by TalentFirst, Create a Culture of Comprehensive Continuous Development Using Technology.
335.	**Talentova Enterprise LMS** by Intrafinity, Helping organizations simplify how key stakeholders develop critical job skills, maintain certifications, and build knowledge.
336.	**Tangerine** by Zercom Systems, Web based LMS designed for organizations to keep their employees' training up to date, in-turn increasing human capital productivity.
337.	**Teachbase** by Teachbase, Multipurpose LMS for organising e-learning in your company or for your students. Features include exam creation, reports, statistics.
338.	**Teamfluent** by Teamfluent, Agile learning software. Build a culture of learning and increase productivity.
339.	**TechChange** by TechChange, TechChange provides a learning platform that specializes in delivering professional development and training courses.
340.	**Techniq Online University** by Vitalect, Integrated Software as a Service solution that helps manage training for Corporations, Educational Institutions, & Non-profits.
341.	**The Learning Suite** by IMC, IMC Learning Suite is Europe's leading LMS for the planning, implementation and management of professional learning and development.
342.	**TheLMSapp** by TheLMSapp, Turn your moodle LMS into a native iPad application that allows students and employees to access elearning content on their tablets.
343.	**TheStudentCampus** by TheStudentCampus, An easy to use unique blend of Learning Management System (LMS) & Virtual Learning Environment (VLE) in one innovative platform.
344.	**Thinkzoom** by ej4, Thinkzoom is an easy-to-use, mobile learning platform that allows you to record, edit, track, and share company-specific knowledge.
345.	**Time To Know Connect** by Time To Know Connect is an intuitive yet advanced Learning Management System (LMS), that enables boosted learning processes.
346.	**TopClass** by WBT Systems, eLearning platform for all types of training, delivering personalized learning, assessment, collaboration for Associations &

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	Enterprise.
347.	**Tortal** by Tortal, Tortal Training offers innovative, turnkey and interactive mobile training solutions.
348.	**Train** by Cell by Guide by Cell, Turns any phone into a training tool by connecting the user with valuable content on multiple platforms: audio, sms, image, video.
349.	**Training Evidence System** by Training Evidence Systems, SaaS Learning Management System for mid-sized organizations that need to deliver and track employee training. View Profile
350.	**TrainingForce.com** by Oak Tree Systems, Web-based learning management system for training departments, government institutions and for-profit eduction.
351.	**Trajectory IQ** by Rocketfuel Productions, Game-powered, web and mobile solution for onboarding, awareness, and orientation. Features include progress tracking and analytics.
352.	**Tregga** by Tregga, A virtual learning environment for secondary school students with discussion board, quizzes, and content management.
353.	**Truenorthlogic PD** by Performance Matters, Web-based learning content and processes management software that offers course catalog, premium library,and PLCs/PD plans.
354.	**Ultilearn** by Ultimedia, Create or import e-learning content for unlimited users. Fantastic reporting capability, flexible pricing model and is SCORM compliant.
355.	**UpsideLMS** by Upside Learning Solutions, UpsideLMS is an apt solution for Enterprise-scale organisation or a Small and Medium Business or Training Company.
356.	**viEval** by viDesktop, Performance management and survey system which handles evaluations, goals management, upward and peer reviews and surveys.
357.	**Viewpoint** by Insightworks, An interactive and engaging online training software that provides employees with an effective solution in retaining information.
358.	**Vivid LMS** by Vivid Learning Systems, The only cloud-based LMS designed for safety training management.
359.	**Vowel LMS** by Aims Digital, Vowel LMS does much more that provide a learning platform - it facilitates pronounced learning.
360.	**WBT Manager** by Integrity eLearning, Learning Management System (LMS) designed to organize, deploy and track web-based training content.
361.	**Web eSIMS** by Manvish eTech, Web-based self-service environment for students, parents, prospective students, employees and administration of the college.
362.	**Webcampus Tecnonexo** by AXG Tecnonexo, Flexible learning management

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	system for corporations, government agencies, and educational institutions.
363.	**WebMentor LMS** by Avilar Technologies, Course authoring system that lets you build compelling and effective eLearning solutions.
364.	**Winjigo** by ITWORX EDUCATION, A unique social learning space designed for collaborative learning.
365.	**Wizdom** by G-Cube Solutions, LMS Platform that manages e-learning activities, resources, curriculums and courseware.
366.	**WorkOnIT** by coachByapp, Mobile platform for tracking training initiatives with snack bite and social learning tools combined with intelligent push messaging.
367.	**Wormhole Live Learning Platform** by Wormhole, Wormhole has been defined as the most effective and interactive LMS platform in the wold increasing engagement & retention by 70%.
368.	**XoomPoint** by Neoxen Systems, Social learning platform that allows educational institutions and businesses to manage e-learning content, and collaborate.
369.	**Xyleme LCMS** by Xyleme, LCMS that allows effortless reuse of content to customize and deliver training in any print, online or mobile format.
370.	**Yellow Platter LMS** by Indecomm Global Services, Learn better Collaborate better Perform better.
371.	**Your Safety Partners** by Your Safety Partners, Tracks and launches staff training and is a powerful tool for monitoring and following up compliance training eg safety.
372.	**znanja** by Velsoft, LCMS that allows you to automatically convert your electronic files into SCORM-compliant eLearning in less than a second.
373.	Epistum by iVote » Epistum is an advanced e-Learning and e-Testing on-line platform. It has two components: the e-Learning Management System (LMS) and the e-Testing System. The LMS is a web-based training solution that manages and delivers training courses.

CONCLUSION

Conclusively, the world has changed dramatically and is still radically changing for better digitally. Allowing university curriculum to undergo evolution as traditionally done in Nigeria is not and can never be enough at this era of Web 2.0 and Big Data. Acquisition and effective use of Learning Management System (LMS) is the only right way forward. It is the use of LMS that can revolutionise the current antiquated university education delivery with its entire learning environments in Nigeria to smart learning environments as demanded by the changed and

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astronomically changing world. Conversation on the need for Nigerian universities to immediately gallop into the use of LMS for transformational teaching-learning delivery needs to be larger, the sense of urgency with which it is done needs to be greater, and the vision and imagination of what is possible needs to be far broader to enable the universities contribute very meaningfully to and benefit maximally from the fast radically changing world of globalization and internationalization.

Methodological approaches and efforts towards attainment of excellence in university education, as the most powerful instrument for social and economic advancement, have undergone exhaustive changes technologically such that the core learning materials, information, and the transformative learning experiences are acquired, utilized and securely saved unmistakably in the cloud. For the university to play a leading role in the ever-changing world of globalization, internationalization, and digitalization; the educational curriculum must necessarily be adapted to suit the Revolutionary Information Age that we live in.

The most important substance and the real essence that has positively reduced the entire world into a small global village is virtual connectivity, occasioned by Information and Communication Technology. Almost every important thing in the globe is currently done electronically at an unimaginable speed. In a world of electronic transactions, the planning and execution of university curriculum to engineer and direct the ever increasing radical change can best be done virtually. Tertiary education curriculum delivery in a digital internet world can best be done digitally via the internet.

The means by which university curriculum is best delivered electronically is known as Learning Management System (LMS). Learning Management System (LMS) is a Web 2.0 software for scalable and robust curriculum design, documentation, administration, implementation, tracking, reporting and unlimited access to educational courses or training programmes for the actual production of an educated person, one who is skilfully equipped with all that it takes to maximally function as the real agent of change in the global digital knowledge economy. Learning Management System is currently the climax to which educational technology is applied in the planning and execution of transformational teaching-learning experiences interactively and collaboratively to best capture and maintain the students' attention via a wide range of platforms that most suits the briskly changing world of globalization and internationalisation.

Consequently, Learning Management Systems (LMSs) are used all over Higher Education Institutions (HEI) in Europe, North America, South America, Asia, Oceania, and most countries in Africa. The need to acquire, know, understand, and actually use LMS in the Third World countries as in the Developed World has arisen and is rapidly increasing aggressively in today's ever-changing globalized digital knowledge economy, where even the currency is virtual such as

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Bitcoin and Cryptocurrencies. Unfortunately, LMS is not yet in use in any of the Nigerian universities due to lack of information. This research has painstakingly sourced for, critically evaluated and provided every necessary information about LMSs – how and why they function, why and how they are developed and used, where and how to acquire them, and which LMSs are the most adopted worldwide. The study has successfully arrived at and listed 373 most widely used LMSs on the basis of their available research, guides, and infographics; and in terms of the most transformative, most scalable, most robust, most popular, most affordable, most user-friendly, and other necessary features in 2017 and beyond for universities that are still traditional to easily acquire, customize and use in effective and most refined higher education delivery for the production of truly internationalized graduates or persons that globalization and the Revolutionary Information Age demands.

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