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## **Dear GLOKALde Readers,**

Among the goals of the GLOKALde are sharing experiences regarding effective use of distance and open education in open, blended, formal and non-formal education contexts, and providing a communication network among distance education experts in order to be able to define new strategies to deal with the issues of distance education. International in scope, this scholarly e-journal will publish quarterly, refereed, blind-reviewed articles focusing on the issues and challenges of providing research and information services to students enrolled at any level of distance education. It will particularly strive to meet the continuing education needs of practitioners by providing a forum for the discussion of extended learning policies and practices, and trends in information technologies as they impact the delivery of any kind of student support services for distance learners and institutions.

As an academic in the field of distance education, I have been fulfilling many other academic responsibilities throughout my academic life such as giving lectures, conducting research, coordinating courses, presenting papers in national or international seminars and conferences, supervising MA or PhD studies, acting as a jury member in defenses, and assuming other administrative roles as well, including being a department chair, science and advisory committee member, conference organizer, etc.

I am proud to take a new responsibility now as the founder of the UDEEEWANA and as the Editor-in-Chief of GLOKALde. Some of you know me quite well from the distance education literature and Anadolu University's online journal TOJDE experience in the field for 15 years, I believe that we will succeed all together at crowning GLOKALde with such achievement in due course as well. Under its renowned editors and experienced administration, and supported by its professional technical team, I am quite sure that GLOKALde will keep publishing the highest academic quality research by well-known experts and authors in the distance education field.

This issue covers 7 articles written by 19 authors from Finland, India, Indonesia, Malaysia, Nigeria, Pakistan, Russia and Ukraine. In addition, this issue includes two papers in the "Notes for the Editor" section, four in the "Re-published materials" section, and two book reviews in the "Book Review" section. Before the "Articles" section, you will notice an announcement that explains the scope of and the reasons for the creation of UDEEEWANA.

In addition, GLOKALde will republish some useful materials, reports, fact sheets, etc from the past for its readers who may have missed them.



**Dear GLOKALde readers, this is my fifth editorial responsibility, first of all, greetings from Turkey. Welcome to the fifth issue of the GLOKALde, as Volume: 2, Number: 1 January 2016 issue as an official online journal of the UDEEEWANA (<http://www,udeeewana.org>) which covers new relationships between the theory, technology and the practices of education in the countries within the borders of the UDEEEWANA map, based on distance education with a population of more than eight million distance education learners. It is one of the most extensive global distance education associations. The GLOKALde reflects the disciplines of Distance teaching, education, learning, open, blended learning areas that are interdependent and interdisciplinary with other disciplines, as education and technology increasingly drive systems, students, colleagues, distance educators, administrators, researchers and our own professional practice.**

**The GLOKALde aims to establish new channels of communication for the distance education world in general, but especially for the regions and countries included in UDEEEWANA as the association for the region that covers Eastern Europe, Scandinavia, Baltic, Turkic, Caucasians, Middle East, Arab Peninsula and North Africa which include the countries of Afghanistan, Algeria, Azerbaijan, Belarus, Bulgaria, Cyprus, Egypt, Estonia, Finland, Greece, Georgia, Jordan, Hungary, Iraq, Iran, Israel, Kazakhstan, Kyrgyzstan, Latvia, Libya, Lithuania, Macedonia, Moldova, Morocco, Northern Cyprus Turkish Republic, Norway, Oman, Palestine, Poland, Romania, Russia, Saudi Arabia, Serbia, Slovakia, Slovenia, Sweden, Syria, Tajikistan, Tunisia, Turkmenistan, Turkey, Ukraine, United Arab Emirates, and Uzbekistan.**

**Once again, I am proud to take a new responsibility as the Editor-in-Chief of GLOKALde.**

**The first paper is reached to the GLOKALde for "Notes for the Editor Section", from Finland and written by Petri LOUNASKORPI, on "EXPANDING YOUR LEARNING ENVIRONMENTS: New possibilities of Virtual reality and Virtual learning environments".**

**His paper mentions that today the developing technology has made all these possibilities available for all learners. Many training providers have created multiple learning environments, which use Virtual Reality (VR), 3D simulations and Augmented Reality (AR) as Open Educational Resources (OER). These new possibilities are not well known and their usage is low. There are a couple of reasons for the slow diffusion of these new learning possibilities. Firstly, the implementations of these new learning environments need new skills, attitude and courage. Secondly, the traditional fact is that those teachers teach as they have learned. So the usage of these new possibilities challenges both teachers and learners to learn new skills, competences and to open their minds for learning by doing.**

**The second paper for "Notes for Editor Section" is submitted to GLOKALde from India and written by R. SIVAKUMAR, from Education Wing-DDE, Annamalai University, Tamil Nadu on "Effective Uses of Field Trips in Educational Programming."**

His paper mentions and gives insight that -field trips- help bridge formal and informal learning, and prepare students for lifelong learning. Field trips are one way of adding variety to instruction, thus optimizing teaching effectiveness while motivating student learning. As education becomes more relevant to the inner perceptions of students, it will produce more meaningful learning, be more likely to change their behavior, and improve their retention.

The first article is written by Oleksii P. MUKOVIZ, Ph.D. (Pedagogics), Assoc. Prof. of Theory of Primary Education chair Pavlo Tychyna Uman State Pedagogical University, Ukraine, and his article is titled as "The Examination Of Readiness Of Primary School Teachers To Distance Learning In The System Of Lifelong Education". His article analyzes the state of readiness of primary school teachers to distance learning in the system of lifelong education. Motivational-value, operational and cognitive components which represent the structure of primary school teachers' readiness to distance learning in the system of lifelong education are characterized. Four levels of readiness are defined: low, average, acceptable and high. 519 respondents participated in the experiment: 342 students who were trained in the specialty of "Primary Education" (educational qualification levels "specialist" and "master"), 81 primary school teachers and 96 lecturers of the Primary Education Faculty. The experiment involved defining indicators, levels of primary school teachers' readiness to distance learning in the system of lifelong education and the use of the following methods: questioning, conversation and observation. Methods of mathematical statistics were used to process the data.

The analysis of the experiment results showed that primary school teachers' readiness to distance learning in the system of lifelong education is predominantly within the low and average levels. Therefore, the formation of primary school teachers' readiness to distance learning in the system of lifelong education can be carried out within the course "Fundamentals of Distance Learning in Primary Education".

The second article is written on "Internalizing Learning Management System to Increase Learning Quality at Selected Study Programs in Hasanuddin University", written by Yusring SANUSI BASO, Hasanuddin University Arabic Department, Indonesia. He mentions that the usage of e-learning in education is growing very rapidly. To meet this need, Hasanuddin University has been practising e-learning since 2009, namely, Learning Management System (LMS). The purpose of this medium is to improve the quality of teaching at this campus. Unfortunately, this LMS is underutilized. This research was conducted to change the academic culture, from where lecturers are not accustomed LMS in teaching and learning process to become more familiar with it. In regard to this need, several activities have been conducted to ensure internalization of LMS in order to increase the learning quality at the Selected Study Program at Hasanuddin University.

Those activities are: presentation in front of USAID regarding the achievement of action research, evaluation and conducting assessment in regard to the quality of Learning Management System (LMS), dissemination through social media, a series of Workshops on LMS, data cleaning and backing up, uploading courses on LMS, monthly meeting and survey on students' satisfaction in utilizing LMS.

**There were two study programs involved in this research: Arabic and Fishery Resources Utilization Study Programs.**

**A Survey has been conducted by using Technology Acceptance Model (TAM). This TAM consists of Perceived Ease of Use (PEU), Perceived Usefulness (PU), Attitude Toward Using (ATU), and Behavioral Intention to Use (BIU). Scales used range from 1 to 5. Surveys show that Perceived Ease of Use reaches 4.33; Perceived Usefulness reaches 4.18; Attitude Toward Using reaches 4.22; and Behavioral Intention to Use reaches 3.86. These percentages indicate a high student satisfaction rate especially in the first three constructs.**

**For that reason, technological variables are not the problems. The researchers conclude that the policy from the leaders has to be strict, not only to support the LMS utilization but also issue the decision letter stating that LMS is a compulsory learning tool to support the learning process at Hasanuddin University.**

**The third article has been contributed by SIR U. S. A OSUJI, from School Of Education National Open University of Nigeria, Victoria Island, Lagos, Nigeria, on the subject and titled as "Examination Ethics in Open and Distance Learning Institutions". He mentioned in his article that students at every level of education, including the ODL system, tend to study to pass examinations. They tend to look for the easiest way out of challenges. As result, they tend to make use of the 'short- cuts', which can lead them to do things which are not permitted in the school system, which include examination malpractices and cheating. In this paper, issues in the administration of examinations in ODL, ensuring high quality examination system, characteristics of a good examination system, examination ethics in ODL system and the stages of examination ethics are discussed.**

**The fourth article has been submitted from Ukraine and titled as "E-Learning In The Agrarian College Of Management And Law Of Poltava State Agrarian Academy: Approaches to Global Integration" written by Natalia KONONETS who is from Agrarian College of Management and Law Poltava State Agrarian Academy, Poltava.**

**The purpose of this paper is to explore distance learning as a form of organization resource-based learning (RBL), in the disciplines of computer cycles for students in the Agrarian College. RBL is considered as a combination of face-to-face and distance learning, providing quality training of future specialists. It analyses the content, types, and methods of distance learning, and serves the structural scheme of the study subjects cycle computer with resource-based learning. The author offers a way of creating a distance learning course with the help of the Internet service <https://sites.google.com> and gives examples for distance learning tasks.**

**The fifth article is from Malaysia on "Illuminating 'Second Life's Benefits And Challenges As An Interactive Blended Virtual Learning Platform For English Language Teaching And Learning" written by Riad F. HASSAN, Hisham DZAKIRIA, from Universiti Utara Malaysia, and Rozhan M. IDRUS from Universiti Islam Malaysia.**

The article touches the advancement and innovation on learning technology such as 3D virtual worlds, offering new opportunities for teaching and learning languages. Virtual World such as *Second Life* (SL) functions as a global platform that potentially can become a powerful tool in learning and teaching of English as a foreign language due to its immersive and interactive environments. Its interactive interfaces provide students with realistic experiences and simulated everyday situation in 3D virtual worlds for more authentic and physical practice that would enhance students' awareness of the target culture, knowledge construction and learning.

This paper highlights the benefits and challenges associated with Second Life as an educational tool in EFL classroom. Specifically, this paper is intended to review Second Life potential in virtual learning and its affordances offerings to enhance EFL which produces the motivating factor towards a doctoral study on Second Life and its potential to offer a fun-engaging-inviting learning of the target language never envisioned or made possible in the conventional classrooms.

The sixth article is on "Training Need Assessment of Administrative Staff Of Allama Iqbal Open University, Islamabad" and written by Muhammad Afzal TAHIR and Muhammad Asif CHUADHRY from AIU, Almas KIANI and PMAS-Arid University and Sumaira LIAQUAT, from AIU, Islamabad, PAKISTAN. They discuss Needs assessment and Human Resource Development, which are closely aligned. The study was undertaken with the following objectives: to identify the human resource development needs of administrative staff, analyze training needs of administrative staff, and suggest solutions for the problem by developing a training model for administrative staff. For data collection, a questionnaire was designed on Likert Scale. The population of the study consisted of the whole administrative staff at AIU, Main Campus, Islamabad and Regional Campuses/Centers/Offices.

The study was descriptive in nature, for the purpose of data collection, the questionnaire was delivered personally to the respondents at AIU, Main Campus, Islamabad and through mail and email to other Regional Campuses/Centers/Offices. The data was presented in table forms and mean percentages and mean score was calculated. The researchers conclude that staff need training in Rules and Regulation, communication skills/analytical skill, self-motivation, and improving social behavior. They recommended that the administrative staff need training to enhance their working capacity and professional skills for smooth functioning of the office. On the basis of the findings, the administrative staff should be provided on the job or off the job training opportunities and the University should design courses/programs related to the areas highlighted by the findings and periodically launch training programs.

The seventh study is received from Russia conducted as joint research by Tatyana P. PUSHKARYEVA, Vera V. KALITINA, Tatyana A. STEPANOVA, Tatiana R. GILMANSHI, Svetlana I. LYTKINA and Sergei A. KHUDONOGOV, from Krasnoyarsk, RUSSIA on "Informational and Educational Environment for Teaching Mathematics of the Future Engineers of Art Materials Processing Department".

**They describe an Informational and Educational Environment that helps to facilitate the process of teaching mathematics of future engineers of Art Materials Processing Department at technical universities. The development of Informational and Educational Environment on mathematics will help to organize an intensive student activities in studying of mathematics as well as intensive activities for teachers whose work is to provide means and support for such types of educative processes. Training results of Informational and Educational Environment application are not limited to acquiring certain amount of mathematical knowledge and skills but they also imply the development of universal learning approaches and obtainment of personal experience. The results section includes electronic testing according to structure of mental maps in order to determine the level of mathematical knowledge. The conducted pedagogical experiment shows that "Mathematical basis of painting and architecture" course training raises the level of mathematical knowledge of bachelors of Art Materials Processing Departments at technical higher educational establishments.**

**In this issue, we are presenting two book reviews for our readers. The first book review is titled as "QUALITY AND THE FUTURE OF HIGHER EDUCATION", written by Dr. Mansoor Al AWAR and published by Hamdan Bin Mohammed Smart University (HBMSU) Smart University, Publishing House Department,**

**In his book, Dr. Mansoor Al AWAR explores the features of higher education in the Arab world, which pose various challenges for any university in the region. He suggests Quality as a solution for these challenges, giving a detailed account of the objectives and the tracks of quality in higher education institutions.**

**The second book review is reviewed by Nil GOKSEL-CANBEK, from Anadolu University, TURKEY titled as "IDENTIFICATION, EVALUATION AND PERCEPTIONS OF DISTANCE EDUCATION EXPERTS, edited by Gülsün EBY and T. Volkan YUZER. The focal point of this edited book is to define Distance Education Expert (DEE) by analyzing and discussing the required qualifications of DEE under the titles of definition, general characteristics, skills and professional knowledge. While having a debate on the recently mentioned concerns related to DEE, the dimensions of management, communication, pedagogy, technology and evaluation of Distance Education fields are also discussed. This book is divided into 3 sections, namely, Introduction, who are Distance Education Experts (DEE) and Research and Theory Related to Distance Education Experts, with 16 chapters in total.**

**As you will notice that we sometimes include "re-publishing/earlier published material/s" sections in our journal to inform and benefit our GLOKALde readers about earlier research and published studies or newest reports which are related to our field by receiving their official permission and referring to its original citation in the literature.**

**This issue covers three very recent and well-designed reports by Brandon Hall Group. The first report is titled as "LMS TRENDS 2015: Is It Time for Something Different?" The Brandon Hall Group has just released this wonderful report on the LMS trends for 2015.**

This report illustrates a sea change in the growing LMS solutions market with a growing dissatisfaction with current technologies. The report details why folks are looking to move from their current system and the features & service model they are looking for in their next LMS. This is a great snapshot of the LMS industry and peek toward the future. Brandon Hall Group Research Team November ©2015, edited by Sue Greener and Asher Rospigliosi, published by Academic Conferences and Publishing International Limited Reading, United Kingdom. Brandon Hall Group's 2015 LMS Trends Survey executive summary is saying that Learning Management System (LMS) solution continues to underperform across a wide swath according to the organizations that use them. And also it indicates that companies are dissatisfied with basically every aspect of the systems they are using and are looking for better options.

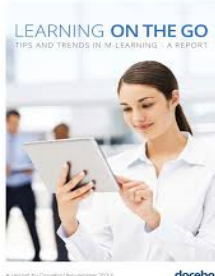


However, this may be the point in time where simply switching to another LMS is not the answer. Instead, companies seem to be longing for a different strategy altogether. While the LMS market has been successful over the last 15 years and technology continues to advance, it seems we are hitting a point of diminishing returns. Companies are demanding more new features, and ignoring much of the functionality that has been built into the systems in the past. The average satisfaction rating for feature sets has dropped consistently from 3.01 in 2012, to 2.95 in 2014, to 2.82 in 2015.

There are changing attitudes about how to approach learning, and the traditional LMS is falling short.

The second report is titled as "Learning on the Go Tips and Trends in M-Learning - A Report." The facts are impressive that mobile devices are proliferating around the world. More people are using mobile devices for more things and, at present, there seems to be no end to this trend. The advent of this mobile phenomenon is changing enterprises worldwide, encompassing all sizes of businesses, industries and all sectors of the economy. However, not all enterprises are taking advantage of mobile Technologies at the same level.

Some organizations simply make use of mobile devices, while other organizations have a holistic approach and can be regarded as fully integrated mobile enterprises. One of the uses for mobile devices is for learning, especially job-related learning. The worldwide market for mobile learning products and services is said to have reached \$5.3 billion in 2012. The five-year compound annual growth rate (CAGR) is 18.2% and revenues will more than double to \$12.2 billion by 2017. This report outlines some of the ways to create a blended learning strategy that encompasses a wide variety of delivery methodologies. In doing so, developers should be keenly aware of their audience. Learning materials should be designed for specific media and should be aligned to organizational competencies.



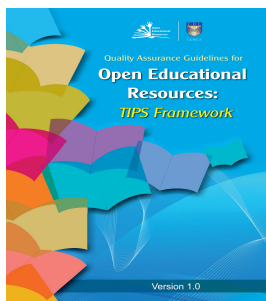
The third report, done by Docebo, is intended to help any decision maker who needs statements, arguments as well as facts and figures to prove, with real and tangible data, the added value of E-Learning initiatives to stakeholders. Report is titled as "E-Learning Market Trends & Forecast 2014-2016". It sets out the results of research analyzing key technology assets for continuous education.



It endorses the use of online learning technologies to; keep the workforce apprised of their job functions' developing requirements, enabling them to make a positive impact within their Organization and help that Organization achieve its aims and goals; aid succession planning, helping workers to acquire the knowledge and skills to help them progress within their Organization; allow Organizations to keep training budgets under tighter control, develop and

retain existing employees and reduce the costs related to external human resources recruitment, selection and on-boarding.

Docebo, a disruptive Cloud E-Learning solutions provider with over 28,000 customers worldwide and an international partner network in more than 26 countries, welcomes the opportunity to further the conversation with you. Please contact us to learn more about how an integrated learning management system can empower your employees to greater effectiveness.



The fourth report on "Quality Assurance Guidelines for Open Educational Resources: TIPS Framework Version 1.0" has completed by Paul Kawachi and conducted by Commonwealth Educational Media Centre for Asia and Open Educational Resources (OER) indicates that OER are currently seen as a viable way forward for achieving education for all. In particular developing countries and the countries on the UDEEEWANA Map can benefit from the OER in developed regions. There is a current global movement towards open digital reusable educational resources. Most

reports on open educational resources and open educational practice start by clarifying their understanding and definition of the terminology. In particular they offer their

interpretation of the meaning of 'open' as used in the expression 'open educational resource' and in other expressions especially 'open content' and 'open accesses.

Now ten years old, the historic definition of OER is essentially functional to allow legal safety to anyone reusing OER without paying royalties and without having to apply to the copyright owner for permission to reproduce the resource. The historical functional definition of OER was given by UNESCO (2002, p.1) as "technology-enabled, open provision of educational resources for consultation, use and adaptation by a community of users for non-commercial purposes ... typically made freely available over the Web or the Internet".

**In simple words, the term open educational resource (OER) is used here to mean a small self-contained unit of self-assessable teaching with a measurable learning objective, often in digital electronic format and generally free to use. Indeed OER are now popular in Western countries and are being pro-actively created by specialist educators and institutions. Nowadays, they are also getting popular in the UDEEEWANA countries as well. These mostly involve tertiary formal education almost to the exclusion of pretertiary (particularly out-of-school), non-formal, vocational, and lifelong learning. Accordingly, these guidelines set out to increase the author-base by offering ideas to teachers in primary and secondary schools - so that when they look at creating their own OER they have recourse to these guidelines to help them. The aim is to offer a starting point for building a culture of quality and professional reflection among teachers who are interested in creating their own OER. The intended audience also includes their students who may want to learn through creating OER.**

**Hope to stay happy and remember each other forever.**

**Happy 2016 for all of you... your Season's Greetings card is here, please click on it:**  
**<http://www.jacquelawson.com/viewcard.asp?code=5900417704494>**

**Hope to meet on April 1, 2016.**

**Cordially,**

**Ugur DEMIRAY, professor.**

**Editor-in-Chief of the GLOKALde**

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## ANNOUNCEMENT OF UDEEEWANA LAUNCHING

**Dear Distance Educators,**

**UDEEEWANA** as a new distance education association is Launched.  
A brief info is presented here **UDEEEWANA**.

**UDEEEWANA -United Distance Education For Eastern Europe, Western Asia, Northern Africa-** is suggested as a new association for the region covering Eastern Europe, Scandinavia, Baltic, Turkic Republics, Caucasians, Middle East, Arab Peninsula and North Africa which are included the countries such as Afghanistan, Algeria, Azerbaijan, Belarus, Bulgaria, Cyprus, Egypt, Estonia, Finland, Greece, Georgia, Jordan, Hungary, Iraq, Iran, Israel, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Morocco, Northern Cyprus Turkish Republic, Norway, Oman, Palestine, Poland, Romania, Russia, Saudi Arabia, Serbia, Slovakia, Slovenia, Sweden, Syria, Tatarstan, Tajikistan, Tunisia, Turkmenistan, Turkey, Ukraine, United Arab Emirates, Uzbekistan and so on.



**A Map of the UDEEEWANA Regional Countries**

## **WHY IS UDEEEEWANA NEEDED?**

It is mentioned in the book titled as "eLearning Practice.... 2010", that eLearning offers many opportunities for individuals and institutions all over the world. Discussion technologies such as mLearning, tLearning and uLearning. Multimedia on the internet, telecommunications, wireless applications, mobile devices, social network software, Web 2.0, Web 4.0, etc. are radically redefining the way people obtain information and the way to learn. Policymakers, international organizations, higher education institutions and researchers in the field of education agree that Information and Communication Technologies (ICT) have the potential to stimulate international collaboration, to create flexible learning paths and to open the borders of the university.

Western and Eastern Asian nations are increasingly embracing eLearning in education and training, both within their classrooms and in distance education. E-transformation has been much slower in the education systems of the Eastern Europe, Nordic, Turkic Republics, Middle East, Arab and North African countries.

It is therefore considered timely to conduct an inquiry into the ways and extent of eLearning in these countries, the factors driving and constraining such developments, and how progress might be further encouraged. Searching the literature, it is possible to find reports, accounts, research findings and conference presentations on eLearning in these countries but many of these are in languages other than English. English language developed in collaboration with colleagues in these various countries and so will be a first and of international significance. Many of the institutions in the countries to be reviewed also make extensive use of traditional teaching, methods and media, so for these countries it will not consider only eLearning and mLearning in isolation but in blended or mixed-mode learning, both in classroom environments and in distance education.

This project focuses on the distance education practices in Turkey, and will examine and discuss the role of leadership to be undertaken by Turkey in the region of Eastern Europe, the Middle East, and North Africa. It is a well-known fact that the international distance education organizations are not well organized and functional in this region. And up to now no institutions have been organized in the countries in the region of Eastern Europe, the Middle East, and North Africa. To fill this gap, Turkey might adopt a leadership role in the distance education field in the region and can organize the practices of the regional countries in academy and practice. Based on this argument, the structure and regulation of the potential organization will be discussed. Furthermore, the draft of the constitution of the recommended association will be presented, which will be redesigned in accordance with feedback from the other shareholders. Thanks to this council, more than 50 countries will have the chance to introduce their distance education practices to the world.

These countries can use UDEEEEWANA to discuss practical and scientific issues via conferences or journals, and they can even establish sub-distance education associations in their region or in their countries. Some of these countries are

Afghanistan, Algeria, Azerbaijan, Belarus, Bulgaria, Egypt, Estonia, Finland, Greece, Georgia, Jordan, Hungary, Iraq, Iran, Israel, Kazakhstan, Kyrgyzstan, Latvia, Libya, Lithuania, Macedonia, Moldova, Morocco, Norway, Oman, Palestine, Poland, Romania, Russia, Saudi Arabia, Serbia, Slovakia, Slovenia, Sweden, Syria, Tajikistan, Tunisia, Turkmenistan, Turkey, Ukraine, United Arab Emirates, and Uzbekistan.

Your opinions, comments, suggestions, and recommendations are very welcome. UDEEEWANA can grow only with your invaluable support and critique.

**Prof. Dr. Ugur DEMIRAY,**  
**Founder President of UDEEEWANA**



Ugur DEMIRAY is teaching at the School of Communication Sciences of Anadolu University, Eskisehir, Turkey. His research deals with distance education practices of Anadolu University, Ministry of Education and by other universities in Turkey. His research also focuses on distance education students' communicational gaps with their institution, the profile of distance education students, and the relationship of graduates with the job market in Turkey. He is also interested in improving the ethical behaviors around the world especially by using distance education applications and eLearning. In addition, his studies also focus on scholarly online journalism, especially on DE. He has an extensive experience publishing internationally in peer-reviewed e-journals on distance education under the patronage of Anadolu University for 15 years, named *TOJDE-Turkish Online Journal for Distance Education*. He is also an editor, consultant editor, and reviewer for more than 15 international journals which deal with distance education and educational technology. In addition, he has responsibilities on advisory boards and is a referee for conferences, symposiums, and panels. He has co-authored and individually contributed chapters in some Turkish and international books. He has also authored many books on distance education and has published a lot of articles in national and international journals. He is now the Editor-in-Chief of GLOKALde, the official eJournal of UDEEEWANA association.

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## **EXPANDING YOUR LEARNING ENVIRONMENTS:** New possibilities of Virtual reality and Virtual learning environments

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### **INTRODUCTION**

Virtual training has been tradition in many areas. Airplane pilot have been trained in simulations for decades and the virtual learning environments for example police, military and security have been used to make the trainings safe. Today the technology has developed so that all these possibilities are available for all learners. Many training providers have created multiple learning environments, which use Virtual Reality (VR), 3D simulations and Augmented Reality (AR) as Open Educational Resources (OER). These new possibility's are not well known and the usage is low. There are couple reasons for the slow diffusion of the new learning possibilities. Firstly the implementations of these new learning environments need new skills, attitude and courage. Secondly the traditional fact those teachers teach like they have learned. So the usages of these new possibilities challenge both teachers and learners to learn new skills, competences and open their mind for learning by doing.

### **THE NEW ENVIRONMENTS**

In this article I shall discuss about some of the new learning possibilities. Serious games and simulations have the longest history. Virtual learning environments, virtual worlds like Second Life have the most number of learning possibilities and learning objects. The Newcomers: Virtual Reality, 3D videos/environments and Augmented Reality expand the learning possibilities of the mobile users.



But the challenge is the new learning skills development. Who will teach the learner the new skills to use the today's learning materials? Will the new excellent content and learning possibilities be only for edutainment without the new attitude?

## SECOND LIFE THE WORLD LARGEST VIRTUAL OER RESOURCE?

Now 12 years old Second Life has been creation platform of learning objects, simulations and free courses for long. In this more than 44 milj. (<https://danielvoyager.wordpress.com/sl-metrics>) users virtual world almost all self-respecting research institutes, universities, museums, cities, companies etc. have created content, simulations and free courses in the environment. These content is very under used. The most used content in the Second Life are the language courses like in the Virtlantis island (<http://virtlantis.com>), where one can learn multiple languages for free.



The huge amount of educational resources can be found at [http://wiki.secondlife.com/wiki/Second\\_Life\\_Education/Resources](http://wiki.secondlife.com/wiki/Second_Life_Education/Resources)

The students challenge is to learn the new skills of virtual environment and virtual learning. Firstly the student has to create an Avatar, learn to move, act and communicate with it. The participation of training might also be a challenge for the Internet connection and equipment.

Secondly from teachers' point of view the teacher has to first find out the quality of the course content, and of course, learn the new skills of the virtual learning environment. This is the traditional way. In the today's, student centred learning culture; teacher's job is to guide the student to the new learning recourses. And after the learning process evaluate the student's skills and competences.

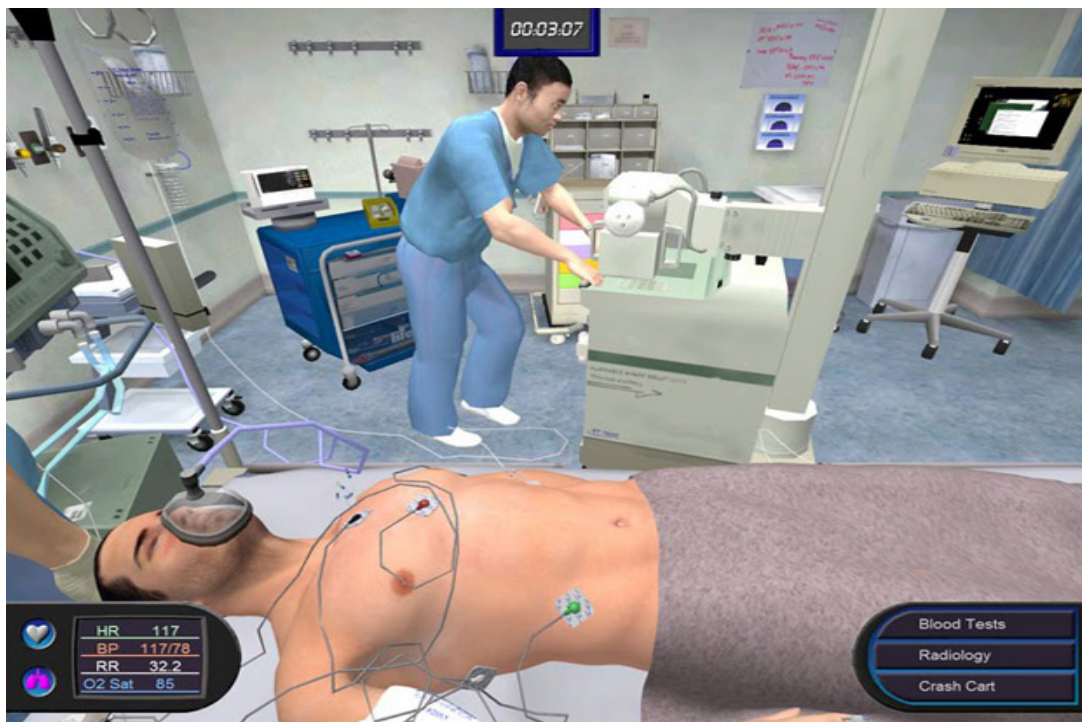


So with activating the student in the learning process the teacher can accredit also courses done in the virtual world.

### **SERIOUS GAMES AND SIMULATION IN LEARNING**

The electronically games are taught to be entertainment of the youth. But the The ESA's report 2015 reflects that sentiment throughout. The average age of someone who plays games is 31 years old. In fact, more gamers are over the age of 36 than between the ages of 18 to 35 or under the age of 18.

This means that the students have quite high skills to adapt the serious games and simulations in their learning processes. And the industry has answered this demand in their internal in-house trainings. More and more companies are building their competence building on gamification and simulations.



This is a challenge to academic training. When the tertiary training (teachers, educators) start to develop the students (future workers) skills in edu-gaming, learning with the games? In my opinion the challenge is the teacher training. Because teachers teach like they have learned, the teacher training ought to give experience of these new ways of learning.

The gaming is mostly problem-solving learning which is one the most effective way to learn. This has been proven in much professional training like airplane pilots. And it's very cost effective compared to the real learning situations. With the student's existing skills the usage of games, simulations and gamification has a bright future in all educational worlds.

## THE NEW MOBILE WINDS OF EDUCATION

The technology and software development and the new economy of Internet have opened the next level of virtual learning. The 3D environments, Virtual Reality and Augmented Reality solutions used by mobile devices are changing the world of simulation and learning experiences. New innovations of the usage of these methods are bringing the learning experiences very near the learner, practically in the learners' pocket.

Think about a jet engine in the classroom. It's an interesting technical machine, but one can't start it inside. But with the Augmented Reality solution student's mobile device (tablet/mobile phone) can show the real action of the engine by animations. All the settings can be simulated and the real picture and understanding of the working principles of the engine can be tested.

On the other hand Virtual Reality can be demonstrated with Google glasses or real 3D environment created with computers. Using a harbour crane inside a 3D virtual picture or acting in a emergency room handling different injures are nice examples of these environments used in professional training. The next step is to create ones' own 3D environment for Personal Learning. The 3D can be created with different free applications like Google Street view. Also one can create 3D videos with the latest equipment. These materials can be shared via platforms like Youtube or even Facebook. This opens wide new vision of the content creation and creation of learning objects and online courses.



## THE CHALLENGE

**“Teachers are teaching like they have learned”. We are training the 21<sup>st</sup> century citizen with 20<sup>th</sup> century teachers training and competences in 19<sup>th</sup> century learning environments. The world outside the educational institutes has changed rapidly but the methods inside the institutes are coping the traditional and secure methods of the trainers. The challenge is rapidly start using the new possibilities and methods in teachers’ in-house training and give them practical experience of the today’s methods, possibilities and pedagogies.**

**Because the teachers are teaching like they have learned.**

## BIO DATA and CONTACT ADDRESS of the AUTHOR



**Mr. Lounaskorpi (born 1958) has excellent vision of implementation of ICT in education. His social skills and competences are excellent. He has been responsible in orchestrating, innovating, designing and implementing web-based learning. As trained M.Ed and Ph.D. student, Mr Lounaskorpi has worked a number of years in different distance education projects in different capacities. He has been designing distance education systems at different universities and companies (in Finland, the Netherlands, England, Portugal and Hungary) as well as training international organizations (UNESCO) and also writing tutoring and student support guides. Mr Lounaskorpi has been consulting a wide number of Finnish and international companies and organizations in the design of their learning, information and performance systems. He has worked in this sector, among others, for projects at Central Finland’s educational system high schools and Vocational institutes, secondary level.**

**His research is focusing on the implementation processes of ICT in education and the new pedagogical methods. *Planning and orchestrating distance education systems and their business.* Mr Lounaskorpi has worked a number of years in different distance education projects in different capacities. He has been designing distance education systems for various environments, writing distance education materials, training distance educators at different universities and companies (in Finland, the Netherlands, England, Portugal and Hungary) as well as training international organizations and also writing tutoring and student support guides.**

**Mr Lounaskorpi has been consulting a wide number of Finnish and international companies and organizations in the design of their learning, information and performance systems. He has worked in this sector, among others, for projects at Central Finland’s educational system (secondary level) and the Finnish Tax Administration and Finnish Customs. Mr Lounaskorpi has more than 10 years experience in project managing. He has completed more than 20 projects and has had several workers in these projects.**



**Main parts of these projects have been connected with e-learning, blended learning or web based learning. Mr Lounaskorpi worked as main trainer and implementer in projects, which have implemented e-learning, -training and b-learning systems to National Customs Agency of Romania, Academy of the ministry of Justice of Croatia, Academy of the ministry of Finance of Georgia. In these projects the peer production method was used and after the piloting phase, more than 80% online students had started their on-line studies. Mr Lounaskorpi is the founder and CEO of the DidacTec Ltd.**

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## **EFFECTIVE USES OF FIELD TRIPS IN EDUCATIONAL PROGRAMMING**

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### **ABSTRACT**

Field trips help bridge formal and informal learning, and prepare students for lifelong learning. Field trips are one way of adding variety to instruction, thus optimizing teaching effectiveness while motivating student learning.

As education becomes more relevant and nearer to the inner perceptions of students, it will produce more meaningful learning, be more likely to change behavior, and improve the retention of students.

**Keywords:** Field trip, educational programme.

### **INTRODUCTION**

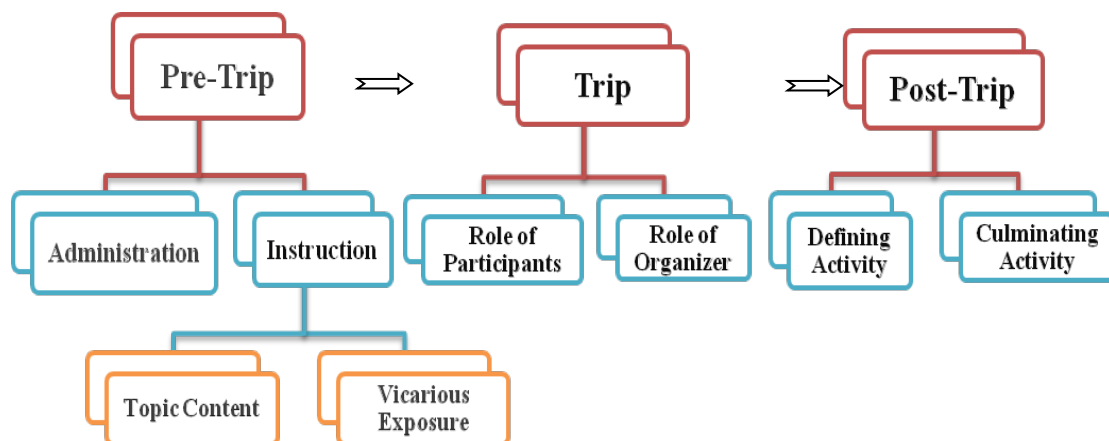
A well-planned field trip enhances learning in the classroom, but the activities you do before you leave supports the hands-on learning experience. The pre-trip activities build interest and provide students with background information. A review of safety guidelines is also a key element to field trip preparation. With a few targeted activities, your students are ready for the educational and entertaining experience while out of the classroom. The use of educational field trips has long been a major part of the education programming for both youth and adults. However, due to funding limitations, time constraints, and increased liability concerns many education professionals balk at requests for field trips. In spite of these concerns, well-planned field trips can be a valuable tool in the extension agents' educational toolbox. An educational field trip can be an integral part of the instructional program.

Good field trips provide participants with firsthand experience related to the topic or concept being discussed in the program. They provide unique opportunities for learning that are not available within the four walls of a classroom. As with any type of educational program component, field trips should be designed around specific educational objectives. A field trip should be designed so participants can easily make connections between the focus of the field trip and the concepts they are learning in the rest of the educational program.

When planning and organizing a successful field trip, three important stages should be included: pre-trip, trip, and post-trip.

### PRE-TRIP STAGE

The pre-trip stage of a field trip involves two major components: administration and instruction. The administration component involves all of the steps taken by the field trip organizer to arrange the logistics of the field trip. Steps include securing permission from appropriate administration, organizing transportation to and from the field trip location, contacting the field trip location to verify the schedule and activities, and obtaining signed permission slips from parents/guardians of youth attending the field trip. Unfortunately, many field trip organizers only focus on administrative concerns during the pre-trip stage of field trip planning. Although the activities of the administration component are important, if organizers only focus on logistics, a major segment of the pre-trip stage is missing and field trips may not be educationally successful.



The instruction component of the pre-trip stage is critical in preparing participants for the experience. The participants, especially youth, often have high levels of anxiety when going on a field trip. Anxiety levels can be especially high for field trips to novel, unfamiliar settings. Often a field trip is the first experience a person has with a particular location. When individuals experience high levels of anxiety, learning cannot take place. To reduce anxiety, field trip organizers need to make participants feel comfortable and safe at the location of the field trip just as they would in a typical classroom.

One method of accomplishing this goal is to provide participants with vicarious exposure to the field trip site as part of pre-trip instruction. Vicarious exposure could involve the field trip organizer showing participants photographs, drawings, or a videotape of the site to be visited.

This can occur at a meeting prior to the field trip or materials may be sent to participants prior to the event.

Another option would be to post important field trip information on the Internet so that participants can visit a website prior to the experience. Items such as the location of restrooms and basic features of the site should be identified. If participants will be at the field trip site during a meal time, such arrangements should also be discussed. Studies in science education have shown time and again that providing participants with vicarious exposure prior to a field trip significantly reduces individual anxiety and increases overall trip effectiveness.

As part of instruction, field trip organizers should also review safety and behavior rules and expectations with youth. These items should also be included in permission slip letters to parents/guardians of youth participants. To increase the educational effectiveness of field trips, pre-trip instruction should also focus on the content topics and concepts that participants will be investigating during the field trip. It is important for field trip organizers to give participants verbal clues regarding what to look for during their activities. Pre-trip instruction makes it easier for participants to focus on the educational goals of the trip. As part of pre-trip lessons, organizers should demonstrate the use of any equipment and explain in detail any activities that will be occurring during the field trip.

## **TRIP STAGE**

The second stage of a successful field trip is the trip itself. Two components should be addressed during this stage: the role of the participant and the role of the organizer. The role of the participant is accomplished by establishing a field trip agenda and sharing this agenda and field trip objectives with the participants. A suggested agenda for a field trip starts with a brief amount of free time for individuals to explore the field trip site on their own space. This open exploration may not be appropriate in all locations. For example, individuals could not roam freely inside an equipment manufacturing plant. They could however, have free time to view items in the visitor area or lobby prior to the guided tour. This exploration time allows participants to get comfortable with their surroundings. Once the basic curiosity of the facility is satisfied, learners are better able to focus their attention on the content topics to be learned.

The second phase on the agenda is often a whole-group guided tour. During the tour, the organizer or tour leader can point out specific items that relate to the educational goals of the trip. This also provides an opportunity for participants to ask any questions they may have developed during their exploration time. The third phase of a suggested field trip agenda is a small group learning activity. The worksheet should be designed in a manner that is challenging to learners yet not frustrating. The worksheet should clearly relate to the educational goals of the field trip.

The role of the organizer is also an important consideration during the trip stage. Although monitoring and management of the experience is important, monitoring participant learning is also a major organizer responsibility. Throughout the field trip, the organizer should be actively engaged in teaching activities. However, on field trips the organizer should utilize different teaching approaches than those used in traditional classroom settings.

Organizers should interact with participants to help answer questions they might have. Organizers should also initiate discussion with small groups of participants by asking them questions. During field trips, organizers should function more as facilitators or guides rather than directors. By playing an active rather than a passive role during the field trip, organizers can increase student interest and learning.

Teachers are responsible for the discipline and safety of their students at all times during the field trip. Students should not run or wander unnecessarily. Noise must be kept to a minimum. While field trip, students must not climb on statues or walk through the grass and/or flowerbeds.

### **POST-TRIP STAGE**

The third and final stage of a successful field trip is the post-trip stage. Like the stages before it, this stage also contains two components: debriefing and a culminating activity. During the debriefing session, participants should be encouraged to share and discuss their experiences during the field trip. This could include sharing and discussing data or results of assigned small group activities as well as sharing feelings about specific aspects of the trip or overall impressions. Participants should also be given an opportunity to identify and discuss problems encountered during the field trip.

The second component of the post-trip stage is a culminating activity. This activity should give participants an opportunity to apply the content knowledge they gained during the field trip. Culminating activities should help learners tie together content they covered in regular educational program sessions and content learned during the field trip.

They can be whole group or small group experiences. Both the debriefing and culminating activity should occur as soon after the trip as possible.

### **MERITS OF FIELD TRIPS**

Field trips help bridge formal and informal learning, and prepare students for lifelong learning. Field trips are one way of adding variety to instruction, thus optimizing teaching effectiveness while motivating student learning.

As education becomes more relevant and nearer to the inner perceptions of students, it will produce more meaningful learning, be more likely to change behavior, and improve the retention of students.

Actual field trips designed to connect classroom topics to real world contexts provide direct learning experiences, adding realism and relevancy to studies. In addition, informal learning environments, such as field trips to museums, zoos, or outdoor settings, appeal to various learning modes.

They have a positive effect on student learning, because they are able to provide concrete sensory input and help students derive meaning from information.

## CONCLUSION

Planning and organizing a successful field trip can be a great deal of work for the organizer. However, by following the simple steps in each of the pre-trip, trip, and post-trip stages, your participants can greatly benefit from your labor.

Also when a well developed field trip plan is presented to administrators, many of their concerns are usually addressed. Field trips should be an integral part of extension programming. If county faculty properly plan and execute educational field trips everyone can benefit from the experience.

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## THE EXAMINATION OF READINESS OF PRIMARY SCHOOL TEACHERS TO DISTANCE LEARNING IN THE SYSTEM OF LIFELONG EDUCATION

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### ABSTRACT

The article analyzes the state of readiness of primary school teachers to distance learning in the system of lifelong education. Motivational-value, operational and cognitive components which represent the structure of primary school teachers' readiness to distance learning in the system of lifelong education are characterized. Four levels of readiness are defined: low, average, acceptable and high. 519 respondents participated in the experiment: 342 students who were trained in the speciality of "Primary Education" (educational qualification levels "specialist" and "master"), 81 primary school teachers and 96 lecturers of the Primary Education Faculty. The methodics of the experiment involved defining indicators, levels of primary school teachers' readiness to distance learning in the system of lifelong education and the use of the following methods: questioning, conversation and observation. Methods of mathematical statistics were used to process the data. The analysis of the experiment results showed that primary school teachers' readiness to distance learning in the system of lifelong education is predominantly within the low and average levels. Therefore, the formation of primary school teachers' readiness to distance learning in the system of lifelong education can be carried out within the course "Fundamentals of Distance Learning in Primary Education".

**Keywords:** Primary school teachers' readiness, distance learning, system of lifelong education

### INTRODUCTION

At the present stage of economic relations development the processes of higher education modernization in Ukraine are directed towards world integration, globalization, democratization and humanization. The modern information society of a developed country requires of higher education institutions training of specialists capable of distance learning in the system of lifelong education.

The necessity of introduction of modern information technologies in education is caused by the fact that under modern conditions primary school teachers need to self-educate throughout life, therefore a new opportunity to learn continuously appeared. Lifelong education is largely associated with the technologies of distance learning (DL), that is, with the use of Internet technologies, and they, in turn, open up great opportunities for effective learner-centered teaching. Therefore, a particularly urgent issue is primary school teachers' readiness to distance learning in the system of lifelong education.

## **RESENT STUDIES ANALYSIS**

The problem of readiness for distance learning of students in educational institutions has always been in the focus of researchers: O. Andrieiev, N. Zhevankina, V. Oliinyk, E. Polat, S. Kalashnikova, G. Kozlakova, G. Kravtsov, V. Kukhareenko, P. Stefanenko, V. Soldatkin, Zh. Talanova, B. Shunevych and others. However, the problem of primary school teachers' readiness to distance learning in the system of lifelong education remains insufficiently studied.

## **THE PURPOSE OF THE ARTICLE**

Analyze the state of readiness of primary school teachers to distance learning in the system of lifelong education.

## **MAIN MATERIAL STATEMENT**

The training of primary school teachers to use DL technologies in the system of lifelong education was studied by us in higher education institutions. In the process of developing an effective system of forming primary school teachers' readiness to DL in the system of lifelong education we have identified the following stages of experimental verification of the main conclusions of our work:

- Ascertaining stage. The level of primary school teachers' readiness to DL in the system of lifelong education was studied;
- Forming stage. The effectiveness of the author's DL model in the system of lifelong education of primary school teachers was tested;
- Analysis of the implementation results of the model of learning.

The stages have no strict limits as it is impossible to fragment the integral process, define its links: where education begins and where beliefs continue, and where the latter pass into active and volitional sphere. However, each stage requires appropriate organizational and pedagogical content.

The DL model in the system of lifelong education of primary school teachers (Mukoviz, 2014) is based on a number of necessary structural elements of professional training, personality traits of a teacher by stimulating the already existing potential characteristics and bringing them to the desired level. At the experimental stage of the study the model as an integrated system of the formation of primary school teachers' readiness to DL in the system of lifelong education was implemented.



Also the process and the nature of the main components were monitored. It was essential to identify and to justify theoretically the significant relationships between the changes in the content, the forms and ways of organization of professional pedagogical training and practical results of primary school teachers' activity, the dynamics of mastering their DL professional skills in the system of lifelong education.

The results of the experiment helped to evaluate its effectiveness, to make the required correction, to generalize the experimental data, to conduct a comparative analysis and to make conclusions.

The logics of the study provided consistent deployment of scientific research from the hypothetical idea about the ways of forming primary school teachers' readiness to DL in the system of lifelong education to modeling the process as an integrated system, which included the experimental verification of theoretical conclusions and practical recommendations. At the ascertaining stage of the experiment we defined the objective: to check the state of readiness of primary school teachers to DL in the system of lifelong education. According to the objective of the study the following tasks were set:

- to identify and substantiate components of primary school teachers' readiness to DL in the system of lifelong education;
- to define and justify the levels of primary school teachers' readiness to DL in the system of lifelong education;
- to check the state of readiness of lecturers to tutor activity in higher educational institutions of III-IV accreditation levels;
- to check the state of readiness of primary school teachers to DL in the system of lifelong learning.

Modern primary school teachers are specialists with a high level of professional readiness that is why in preparatory work with them in the focus of our attention were the following components of readiness to DL in the system of lifelong education: motivational-value (relation to the activity and personal goals), cognitive (knowledge) and operational (skills and abilities).

The emotional-volitional component of professional readiness has universal significance and includes appropriate volitional qualities that are highly developed in each specialist of primary education. Let us describe all components of primary school teachers' readiness to DL in the system of lifelong education and justify the need of them.

### **THE MOTIVATIONAL COMPONENT**

The analysis of psychological and educational literature showed that it is impossible to achieve high results in the development of a person without positive motivation and, therefore, in the effective professional activity (Slastenin, Isaev, & Shijanov, 2002; Shadrikov, 1996; Shtejnmech, 1998). Psychological Dictionary defines motivation as "a complex process that requires analysis and evaluation of alternatives, choice and decision making.

**Motives cause defining of a goal as a subjective image of a desired result of the expected activity, action" (Platonov, 1984). The precondition for the development of a motive is interest. It is interest that determines the state of motives and goals. A. Leontev proposes for awakening interest to form a motive and then to open the ability of goal finding for those who learn. Professional interest can be formed through the formation of the motive for pedagogical activity.**

**The scientist stresses that "the process of the emergence of new motives and new kinds of activity is characterized by the transference of motives towards the realization of a goal" (Leontev, 1975). A goal has a special place in the structure of activity. In psychological and pedagogical literature (Kuzmina, 1985; Leontev, 1975; Platonov, 1984; Zimnjaja, 2002) a range of purposes is considered: from mastering specific topics of the syllabus (close goals) to developing abilities to perform professional activities (distant goals).**

**In the study a distant goal is creating a positive attitude of primary school teachers to distance learning in the system of lifelong education that contributes to the effective use of DL technologies in professional activity, a close goal is solving the educational tasks that are offered to develop certain personality traits.**

**If a teacher is aware of close and distant goals of preparation for the use of DL technologies in professional activity, it means that the motivational component of readiness has been formed. A conscious motive makes a specialist strive for self-improvement and use of DL technologies in solving professional tasks.**

**The motivation of primary school teachers for DL in the system of lifelong education is, first of all, cognitive motivation, which is the basis of active learning activities, the catalyst of the learning process and contributes to the search for new ideas of using DL technologies, the acquisition of new knowledge, abilities and skills.**

**This proves the connection of the motivational component with cognitive operational components of readiness.**

## **THE COGNITIVE COMPONENT**

**The cognitive component of readiness implies that primary school teachers have professional expertise, which combines psychological, pedagogical and methodical knowledge and the knowledge of the DL problem.**

**Psychological and pedagogical knowledge includes the knowledge of the DL technologies use in professional pedagogical activity.**

**Methodical knowledge is the knowledge about the general methods and techniques of the organization of the teaching-learning process using DL technologies. Knowledge of the DL technology is the knowledge of software and hardware of DL technologies.**

The cognitive component characterizes the amount of knowledge and innovative way of thinking. Let us define in the structure of the cognitive component the professional knowledge, which should have a modern primary school teacher in the system of lifelong learning (see Table 1.).

**Table 1.**  
**Structure of the cognitive component of primary school teachers’**  
**readiness to DL in the system of lifelong education**

<b>Component of professional activity</b>	<b>Knowledge</b>
<b>gnostic</b>	modern approaches to the use of DL technologies in the system of lifelong education of primary school teachers; kinds of activity of participants of the teaching-learning process in DL in the system of lifelong education of primary school teachers; software for diagnosing, monitoring and evaluation of academic achievements of pupils (students);
<b>projective</b>	theoretical foundations of DL in the system of lifelong education of primary school teachers; peculiarities of developing distance courses in the system of lifelong education of primary school teachers; psychological and pedagogical aspects of the use of DL in the system of lifelong education of primary school teachers;
<b>constructive</b>	application of DL technologies in the system of lifelong education of primary school teachers; special software and hardware in DL in the system of lifelong education of primary school teachers;
<b>organizational</b>	organization and implementation of DL in the system of lifelong education of primary school teachers; technologies of organizing DL in the system of lifelong education of primary school teachers;
<b>communicative</b>	potential of DL technologies for communication, organization of interaction and collaboration in the system of lifelong education of primary school teachers; the rules of e-mailing and communication in the system of lifelong education of primary school teachers;
<b>creative</b>	potential of DL technologies in the implementation of non-standard classes in system of lifelong education of primary school teachers; potential of DL technologies in training, conducting contests and competitions in the system of LLE of primary school teachers.

## **THE OPERATIONAL COMPONENT**

The operational component reflects practical readiness of primary school teachers to DL in the system of lifelong education. This is the organization of practical educational-cognitive activity of learners with mastering the content of education.

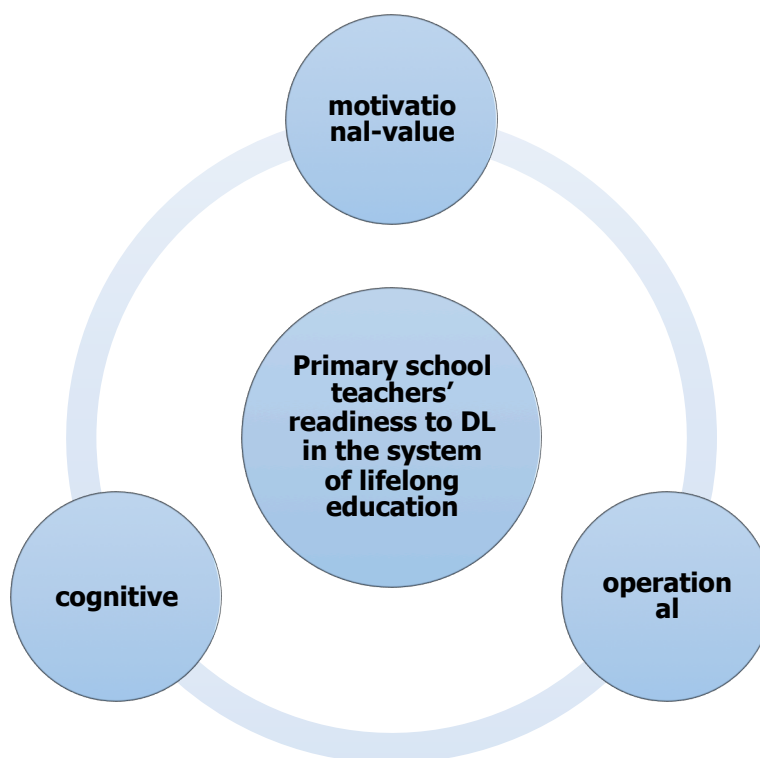
This component is one of the main components of the didactic process; it can be defined as a processual, methodical (Yahupov, 2002). The processuality of this component is reflected in the form of training of primary school teachers to DL in the system of lifelong education. The structure of this component includes a set of skills and abilities associated with the use of DL technologies in professional activity.

The educator's abilities prove conscious mastery of DL technologies. The structure of the operational component of readiness is shown in Table 2.

**Table 2.**  
**Structure of the operational component of primary school teachers' readiness to DL in the system of lifelong education**

<b>Component of professional activity</b>	<b>Skills and know-how</b>
<b>gnostic</b>	to search ways to improve the use of DL technologies in the system of lifelong education of primary school teachers; to use universal and special DL technologies in the system of lifelong education (LLE) of primary school teachers;
<b>projective</b>	to develop distance learning courses in the system of LLE of primary school teachers; to plan the activities of the subjects (participants) of the educational process using DL technologies in the system of LLE of primary school teachers;
<b>constructive</b>	to integrate multimedia technologies, special hardware and software in DL; to develop educational resources, means of evaluation of educational achievements of the subjects of the educational process by means of DL technologies in the system of LLE of primary school teachers;
<b>organizational</b>	to organize own activity and the activity of other subjects of the educational process in DL in the system of lifelong education of primary school teachers; to diagnose and monitor the activity of the subjects of the educational process and evaluate their educational progress in the system of LLE of primary school teachers;
<b>communicative</b>	to carry out the organization and moderation of electronic communication in individual, pair and group activities of the subjects of the educational process by means of DL in the system of lifelong education of primary school teachers; to establish the relationship between the subjects of the educational process by means of DL in the system of lifelong education of primary school teachers;
<b>creative</b>	to conduct research activities using the means of DL in the system of lifelong education of primary school teachers; to create (find) own original approaches to the use of DL in the system of LLE of primary school teachers; to set professional tasks and solve them creatively using DL technologies in the system of LLE of primary school teachers.

Consequently, the motivational-value, cognitive and operational components together represent the structure of primary school teachers' readiness to DL in the system of lifelong education (See Figure 1).



**Figure 1.**  
**Structure of primary school teachers' readiness to DL**  
**in the system of lifelong education**

The links between the structural components of primary school teachers' readiness to DL in the system of lifelong education, which are shown in Figure 1, prove that the successful formation of the cognitive and operational components is possible on condition that a teacher has a positive attitude to DL technologies, understands the necessity and expediency of their use in their professional activity, focuses on self-improvement and self mastery of new DL technologies and adequately appraises own activity in DL.

At the same time, it is impossible to form the motivational-value component of primary school teachers' readiness to DL in the system of lifelong education without the appropriate knowledge and skills.

The next step of our research was to determine the readiness levels of primary school teachers to DL in the system of lifelong education.

The analysis of scientific papers of O. Abdullina, D. Bodnenko N. Volkova, O Dubaseniuk, T. Koicheva, O. Kirilenko, N. Kuzmina, O. Piekhota, I. Pidlasyi, O. Samoilenko, V. Slastonin and others has given us reasons for singling out four levels of readiness of primary school teachers to DL in the system of lifelong education. Let us characterize these levels.

## **THE LOW LEVEL**

The low level of readiness of primary school teachers to DL in the system of lifelong education indicates that such teachers lack the following:

- personal interest in DL; positive attitude to DL in educational activity, such as the study of capabilities,
- purpose of the use of DL technologies;
- understanding the advantages of DL technologies in pedagogical activity; interest in developing their own information products (an educator prefers already created information products, educational software, digital educational resources);
- self-improvement in DL; skills and abilities to analyze and select digital educational resources (large number of information resources and software makes it very difficult to choose those that meet the goals and tasks of a lesson);
- ability to articulate the purpose of DL in accordance with their individual
- characteristics, to plan their own pedagogical activity and the activity of others, to plan curricular and extracurricular activities in DL;
- knowledge about the existing educational software for organizing the process of learning in primary education, DL hardware and software, monitoring and evaluating their own learning achievements by means of DL;
- knowledge about the organization of communication among participants of educational activity in DL.

Weak knowledge of DL technologies while working with distance courses and lack of skills to integrate DL into projects are the characteristics of the low level of primary school teachers' readiness to DL in the system of lifelong education.

Consequently, the low level of readiness to DL in the system of lifelong education is characteristic of educators with weak knowledge and skills in DL, those who do not seek to acquire them and are not able to appreciate the advantages of DL. Planning their own professional activity they use traditional forms and methods of presentation, communication, organization of teaching-learning process in higher education institutions.

## **THE AVERAGE LEVEL**

The average level of primary school teachers' readiness to DL in the system of lifelong education is characterized by the following features: educators are not always aware of the purpose, objectives and peculiarities of DL; have positive attitude to DL, but prefer traditional forms and methods of organizing the teaching-learning process in primary education; actively master the suggested DL technologies, but do not aspire to self-improvement, do not want to master other DL technologies; show an active interest in analyzing DL, but their knowledge of psychological and pedagogical aspects of implementing in teaching-learning process in higher education institutions is incomplete or inaccurate.

Typically, such educators have general knowledge of DL, available educational software, software for communication and interaction; have difficulty in using them in planning their own activity or students' activity.

The characteristics of an average level of primary school teachers' readiness to DL in the system of lifelong education are as follows: the ability to analyze DL, understanding the benefits of using DL compared to traditional forms and methods of learning and partial awareness of the problem of their own choice and the use of DL in any educational activity; adequate evaluation of their own activity during DL.

Thus, teachers with an average level of readiness for DL in the system of lifelong education use DL occasionally. They have sufficient knowledge of professional, psychological, pedagogical, and methodical and IT subjects, but underestimates digital educational resources, have difficulties in planning teaching-learning process and are not always able to adjust their activity in a specific learning situation.

#### **THE SUFFICIENT LEVEL**

The sufficient level of primary school teachers' readiness to DL in the system of lifelong education is defined as the ability to clearly understand the necessity for and expediency of certain DL technologies in any sphere of educational activity. Educators with a sufficient level of readiness understand basic methodical tasks of DL, confidently use DL technologies in educational activity, create from templates and integrate distance courses, but technically and technologically well developed educational products do not always take into account the principles of teaching, psychological and pedagogical requirements. The characteristics of a sufficient level of primary school teachers' readiness to DL in the system of lifelong education are as follows:

- the ability to plan own activity in DL;
- the ability to see the mistakes and shortcomings, but their correction requires the help of a specialist.

Educators adequately assess their readiness, but cannot heighten its level. Teachers with a sufficient level of readiness to DL in the system of lifelong education are well aware of the purpose and goals of DL, the need for mastery of special knowledge of DL and special DL techniques, have enough skills in the use of DL technologies, are critical of their own capabilities and abilities, seek lifelong learning by means of DL.

#### **THE HIGH LEVEL**

The high level of primary school teachers' readiness to DL in the system of lifelong education indicates the following: a strongly marked positive attitude to DL; awareness of the importance, necessity of DL in pedagogical activity; deep understanding of the important role of information competence in future professional activities; focus on self-motivation in DL.

**Educators with a high level of readiness know basic concepts of DL, have deep theoretical knowledge of DL, its types, functions, feasibility and the models of implementation in educational activity; know special software and hardware, special multimedia equipment and its use in educational cognitive and project activity, individual work; understand the capacities of DL for communication, organization of interaction, collaboration, research; know the requirements for the use of DL technologies, requirements for distance courses and rules of safe operation of DL technologies.**

**The characteristics of a high level of primary school teachers' readiness to DL in the system of lifelong education are as follows: the ability to articulate the purpose of educational activity; the ability to plan their activities in DL; the ability to plan and the skills to create and use various information educational resources within their subject area (presentations, syllabuses, models, methods of assessing educational achievements and diagnostics); the ability to use local and global networks for organizing pedagogical communication, project, individual, pair, group activities and primary school teachers' communication in the system of lifelong education; the ability for self-reflection, for an adequate analysis and appraisal of their own activity in DL, for quick correction in a particular learning situation, for independent search for ways of improving this activity.**

**Thus, teachers with a high level of readiness and have a steady need and clear motivation for using DL technologies in pedagogical activity; have sufficient fundamental knowledge of DL, psychological, pedagogical and methodical knowledge, using it in their professional activity; have a developed system of skills and abilities of the practical, methodical and professional use of DL technologies, creative professional activities in DL; the ability for self-analysis, prognostication, self-improvement and self-education.**

**The ascertaining experiment took place in 2014 in six educational institutions:**

- **Pavlo Tychyna Uman State Pedagogical University (170 students and 96 lecturers).**
- **Hryhoriy Skovoroda State Pedagogical University of Pereyaslav-Khmelnytsky (46 students).**
- **Ivan Ohienko Kamianets-Podilsky National University (70 students).**
- **Volodymyr Vynnychenko Kirovograd State Pedagogical University (56 students).**
- **Zhytomyr Regional Institute of Postgraduate Pedagogical Education (43 primary school teachers).**
- **Cherkasy Regional Institute of Teachers' Postgraduate Education (20 primary school teachers).**
- **K. D. Ushynskyi Chernihiv Regional Institute of Postgraduate Pedagogical Education (18 primary school teachers).**

**In total, 519 respondents participated in the experiment: 342 students trained in the speciality "Primary Education" (educational qualification levels "specialist" (7.01010201) and "master" (8.01010201)), 81 primary school teachers and 96 lecturers of the Primary Education Faculty.**



**The methodics of the ascertaining experiment involved defining indicators, levels of primary school teachers' readiness to DL in the system of lifelong education and the use of the following methods:**

- **questioning,**
- **conversation and**
- **observation.**

**Methods of mathematical statistics were used to process the data.**

**Taking into consideration the complex structure of the studied phenomenon, we identified two approaches of defining readiness to DL in the system of lifelong education of primary school teachers:**

- **their self-esteem, which was studied on the basis of questionnaires;**
- **an expert assessment by specialists of the indicators of the formed phenomenon in the respondents according to the results of the respondents' answers to the questions in the questionnaire developed by us.**

**The study was held mainly at Pavlo Tychyna Uman State Pedagogical University, so before defining the state of primary school teachers' readiness to DL in the system of lifelong learning, we examined the state of readiness of the lecturers of this university to tutor activity in higher education institutions of III-IV accreditation levels.**

**The survey was prepared and conducted to define the state of the lecturers' readiness to tutor activity in higher education institutions of III-IV accreditation levels. In total, 96 lecturers of the Primary Education Faculty at Pavlo Tychyna Uman State Pedagogical University participated in the experiment. The average age of a lecturer who completed the questionnaires was 37 years, although 40-49 year-olds and 26-28 year-olds predominated.**

**The majority of respondents were female (80), the rest were male (16). The majority of respondents had 12-20 years of teaching experience at university.**

**The above described components (motivational-value, cognitive, operational) and levels (low, average, sufficient, high) of primary school teachers' readiness to DL in the system of lifelong education are also suitable for defining the state of lecturers' readiness to tutor activity in higher education institutions of III-IV accreditation levels.**

**The validity of the survey was determined by the adequacy of the content of the questions to the purpose of the study (See Table 3).**

**The questionnaire consisted of 16 questions and respondents indicated their agreement using points: completely agree -3, partly agree -2, partly disagree -1 and completely disagree -0.**

**Table 3.**  
**Questionnaire for defining the state of lecturers' readiness to tutor activity in**  
**higher education institutions of III-IV accreditation levels**

№	Personality Characteristics	Level of Agreement			
		Completely agree	Partly agree	Partly disagree	Completely disagree
1.	I would like to improve my qualification distantly.	3	2	1	0
2.	I think that distance learning is effective for lifelong education of primary school teachers.	3	2	1	0
3.	I would like to use the elements of distance learning in the teaching-learning process in a higher education institution.	3	2	1	0
4.	I am ready to carry out distance learning in lifelong education of primary school teachers.	3	2	1	0
5.	I know the history and theory of distance education.	3	2	1	0
6.	I know the Regulation on distance learning.	3	2	1	0
7.	I know the Regulation on eLearning Certification at Universities and the Ministry of Education and Science of Ukraine.	3	2	1	0
8.	I know the software and hardware which can be used for distance learning technologies.	3	2	1	0
9.	I can communicate remotely (synchronously and asynchronously), regularly and consistently.	3	2	1	0
10.	I can use different forms and methods of organization of distance learning in the teaching-learning process in higher education institutions.	3	2	1	0
11.	I am able to work in information-educational environment at USPU ( <a href="http://dls.udpu.org.ua">http://dls.udpu.org.ua</a> ).	3	2	1	0
12.	I know how to develop distance learning courses.	3	2	1	0
13.	I can provide online assistance during the studying of a distance course.	3	2	1	0
14.	I can create a positive emotional atmosphere between the subjects (participants) of distance learning.	3	2	1	0
15.	I can use different forms of control during the studying of a distance course.	3	2	1	0
16.	I can use an individual approach to the student during distance learning.	3	2	1	0

For verification of the survey results and the subsequent statistical analysis every answer to the question was given qualimetric indicator (See Table 4).

**Table 4.**  
**Qualimetric indicators of the level of formed readiness of lecturers to tutor activity in higher education institutions of III-IV accreditation levels and primary school teachers to DL in the system of lifelong education**

№ question	Component of readiness to DL	Level of readiness to DL			
		Low (points)	Average (points)	Sufficient (points)	High (points)
1-4	Motivational-value	to 2	3-6	6-9	9-12
5-8	Cognitive	to 3	3-6	6-9	9-12
9-16	Operational	to 5	5-11	12-18	19-24
The total number of points according to the level of per capita		to 10	11-23	24-36	37-48

The statistical results of the survey were summarized based on the number of questions, the maximum possible number of points received for the answer and the amount of points according to the level of formation of a readiness component, which was assessed. This table helped to quantify the indicators of the formation levels of respective components of lecturers' readiness to tutor activity in higher education institutions of III-IV accreditation levels.

Having quantified the qualimetric indicators of the defined levels of the components (motivational-value, cognitive and operational) of lecturers' readiness to tutor activity in higher education institutions of III-IV accreditation levels, we related the amount of points in the corresponding part of readiness to the total number of points and calculated the percentage. Then we compared the results to define the components that will need more attention. The analysis of lecturers' readiness to tutor activity according to the levels of formed components is presented in Table 5.

**Table 5.**  
**Level of lecturers' readiness to tutor activity according to the levels of formed components (ascertaining survey)**

Component of readiness	Level of readiness (%)			
	Low	Average	Sufficient	High
Motivational-value	62,5	27,08	6,25	4,17
Cognitive	62,5	29,16	4,17	4,17
Operational	58,34	31,25	6,25	4,16

The data in Table 5 show the superiority of the motivational-value component of lecturers' readiness to tutor activity in comparison with other components. This is explained by the fact that lecturers desire to work in a modern way, but they do not have knowledge, skills and abilities necessary for the realization of this desire. Our further work was directed towards the development of these components of lecturers' readiness to tutor activity. The general level of lecturers' readiness to tutor activity in higher education institutions of III-IV accreditation levels was defined as an arithmetic mean of all the criteria by Formula 1:

$$\sum = (a_1 + a_2 + a_3):n \quad (1)$$

where  $\sum$  is the general level of readiness,

$a$  is the number of participants in the relevant component of readiness,

$n$  is the number of components of readiness (motivational-value, cognitive and operational). The consolidated experimental data are shown in Table 6.

**Table 6.**  
**General description of readiness levels of lecturers to tutor activity in higher education institutions of III-IV accreditation levels (ascertaining survey)**

Level of readiness	Number of lecturers, %
High	4,17
Sufficient	6,25
Average	29,16
Low	60,42

The qualitative analysis of the ascertaining experiment allows to draw conclusions on the causes of the results:

- lack of theoretical knowledge about the problem of DL;
- indifferent attitude of lecturers to organizing DL;
- lack of a set of guidelines on problems of organizing DL;
- lack of awareness of the purpose and objectives of DL.

That is why the technology of training of distance learning tutors (organizers) in higher education institutions of III-IV accreditation levels was further aimed at organizing DL in the system of lifelong education of primary school teachers. Another objective of our study was to examine the state of primary school teachers' readiness to DL in the system of lifelong education.

As it was already indicated 342 students and 81 primary school teachers participated in the ascertaining experiment. All the students have Bachelor's degrees in "Primary Education" and most of them work in their speciality field, so we equated them to primary school teachers.

The average age of a primary school teacher who completed a questionnaire is 25 years, 22 year-olds predominated. The majority of respondents were female (403), the rest were male (20) men. The majority of respondents had not less than 2-3 years of teaching experience at primary school. The validity of the survey was determined by the adequacy of the content of the questions to the purpose of the study (See Table 7). The questionnaire consisted of 16 questions and respondents indicated their agreement using points: completely agree -3, partly agree -2, partly disagree -1, completely disagree - 0.

**Table 7.**

**Questionnaire for defining the state of primary school teacher'  
readiness to DL in the system of lifelong education**

№	Personality Characteristics	Level of Agreement			
		completely agree	partly agree	partly disagree	completely disagree
1.	I fully understand the need to improve my professional knowledge and skills after graduation.	3	2	1	0
2.	I think that distance learning is effective for the improvement of my professional knowledge and skills after graduation.	3	2	1	0
3.	I would like to use the elements of distance learning in the teaching-learning process in a higher education institution	3	2	1	0
4.	I am ready to carry out distance learning in I ifelong education of primary school teachers.	3	2	1	0
5.	I know the history and theory of distance education.	3	2	1	0
6.	I know the basic requirements for the organization and implementation of distance learning in higher education institutions.	3	2	1	0
7.	I know the software and hardware which can be used for distance learning technologies.	3	2	1	0
8.	I know the structure of a distance learning course.	3	2	1	0
9.	I can communicate remotely (synchronously and asynchronously), regularly and consistently.	3	2	1	0
10.	I am able to work in information-educational environment at USPU ( <a href="http://dls.udpu.org.ua">http://dls.udpu.org.ua</a> ).	3	2	1	0
11.	I can use e-lectures, webinars, practical tasks and resources of a distance course.	3	2	1	0
12.	I am generally able to work with distance courses.	3	2	1	0
13.	I can provide online assistance to a group mate during the studying of a distance course.	3	2	1	0
14.	I can create a positive emotional atmosphere during distance learning.	3	2	1	0
15.	I know how to work with tests, questionnaires and do other kinds of activity in a distance course.	3	2	1	0
16.	I am able to work in the system of lifelong learning of primary school teachers ( <a href="http://sno.udpu.org.ua">http://sno.udpu.org.ua</a> ).	3	2	1	0

For verification of the survey results and the subsequent statistical analysis every answer to the question was given qualimetric indicator (See Table 4).The statistical results of the survey were summarized based on the number of questions, the maximum possible number of points received for the answer and the amount of points according to the level of formation of a readiness component, which was assessed.

Table 4 helped to quantify the indicators of the formation levels of respective

components of primary school teachers' readiness to DL in the system of lifelong education.

Having quantified the qualimetric indicators of the defined levels of the components (motivational-value, cognitive and operational) of primary school teachers' readiness to DL in the system of lifelong education, we related the amount of points in the corresponding part of readiness to the total number of points and calculated the percentage. Then we compared the results to define the components that will need more attention. The analysis of primary school teachers' readiness to DL in the system of lifelong education according to the levels of formed components is presented in Table 8.

**Table 8.**  
**Level of primary school teachers' readiness to DL in the system of lifelong readiness according to the levels of formed components (ascertaining survey)**

Component of readiness	Level of readiness (%)			
	Low	Average	Sufficient	High
Motivational-value	62,44	28,63	7,05	1,88
Cognitive	74,17	17,37	6,58	1,88
Operational	48,82	39,91	8,92	2,35

The data in Table 8 show the superiority of the motivational-value component of primary school teachers' readiness to DL in the system of lifelong education in comparison with other components. This is explained by the fact that teachers desire to work in a modern way, but they do not have knowledge, skills and abilities necessary for the realization of this desire. Our further work was directed towards the development of these components of primary school teachers' readiness to DL in the system of lifelong education. The general level of primary school teachers' readiness to DL in the system of lifelong education was defined as an arithmetic mean of all the criteria by Formula 1. The consolidated experimental data are shown in Table 9.

**Table: 9**  
**General description of readiness levels of primary school teachers to DL in the system of lifelong education (ascertaining survey)**

Level of readiness	Number of teachers, %
High	2,04
Sufficient	7,52
Average	28,63
Low	61,81

The analysis of the survey results showed that primary school teachers' readiness to DL in the system of lifelong education is predominantly (89% of respondents) within the low and average levels.

## CONCLUSIONS

Thus, the ascertaining experiment showed that primary school teachers' readiness to DL in the system of lifelong education is influenced by many objective and subjective factors, the development of the internal structure of primary school teachers' training is gradual and acquires the integrity by means of forming a general professional-pedagogical personality of a teacher.

Clearly, primary school teachers' readiness to DL in the system of lifelong education is formed during their professional training and covers the stages of forming motivational and target areas, knowledge about the nature of DL and the possibility of its application in modern lifelong education while teaching academic subjects, developing skills in using the mentioned technology in lifelong education.

The stages have no strict limits as it is impossible to fragment the integral process, define its links: where education begins and where beliefs continue, and where the latter pass into active and volitional sphere. However, each stage requires appropriate organizational and pedagogical content.

In prospect, the formation of primary school teachers' readiness to DL in the system of lifelong education can be carried out within the course "Fundamentals of Distance Learning in Primary Education".

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## **INTERNALIZING LEARNING MANAGEMENT SYSTEM TO INCREASE LEARNING QUALITY AT SELECTED STUDY PROGRAMS IN HASANUDDIN UNIVERSITY**

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### **ABSTRACT**

The use of e-learning in education grows very rapidly. To meet this need, Hasanuddin University has set up e-learning since 2009, namely Learning Management System (LMS). The purpose of this media is to improve the quality of teaching at this campus. Unfortunately, this LMS is un-utilized. This research was conducted to change the academic culture, from where lecturers have not accustomed LMS in teaching and learning process to be more familiar with it.

In regard to this need, several activities have been conducted to internalize LMS in order to increase learning quality at Selected Study Program at Hasanuddin University. Those activities are: presentation in front of USAID regarding the achievement of action research, evaluation and conducting assessment in regard to the quality of Learning Management System (LMS), dissemination through social media, a series of Workshops on LMS, data cleaning and backing up, uploading courses on LMS, monthly meeting and survey on students' satisfaction in utilizing LMS. There were two study programs involved in this research, they are Arabic and Fishery Resources Utilization Study Programs

A Survey has been conducted by using Technology Acceptance Model (TAM). This TAM consists of Perceived Ease of Use (PEU), Perceived Usefulness (PU), Attitude toward Using (AtU), and Behavioral Intention to Use (BIU). Scales used is ranging from 1 to 5. Surveys show that Perceived Ease of Use reaches 4.33; Perceived Usefulness reaches 4.18; Attitude Toward Using reaches 4.22; and Behavioral Intention to Use reaches 3.86. These percentages indicate a high student's satisfaction especially in the first three constructs. For that reason, technological variables are not the problems. The researchers most likely conclude that the policy from the leaders has to be strict, not only to support the LMS utilization but also issue the decision letter stating that LMS is a compulsory learning tool to support the learning process at Hasanuddin University.

**Keywords:** Learning Management System (LMS), learning, TAM Model, students' satisfaction, policy.

## **INTRODUCTION: Background**

**Non-stop development of technology is happen. As we know, students at the moment are technological generation (Natali, 2014). They were born as multitask learners (Helene Hembrooke, Geri Gay (Helene Hembrooke, Geri Gay, 2003), 2003). The research has found on its research that a kid has minimal 4 technological devices, such as TV, Play Station, Hand Phone and Computer (either PC or Laptop). These devices are growing by the time not just in number of production, but also in quality and price (Woodcock, S., Sisco, A. & Eady, M, 2015).**

**In other side, developments of educational technology also increase (Meyer, 2014). Internet use in academic area also grows faster in the latest ten year (Courville, 2011). Along with IT development in the learning, the education world also participates in the competition of having high-tech facilities in their leraning process. Therefore, our facilities in order to guide them to achieve their need must be based on technology.**

**As one of the biggest universities in the country, Hasanuddin University (Unhas) is not left behind in utilizing technology in its education. Since 2008, through INHERENT and IMHERE projects, the university built its intergrated system including e-learning services that is so called Learning Management System (LMS).**

**LMS development through the INHERENT project was based on accelerating the spread of knowledge and sciences from trusted resources. By utilizing LMS, faculty members are hoped to provide reading sources as well as sciences and technology references which are acaddemically accountable. Moreover, LMS development is also to help Unhas faculty members who travel around the country and are assigned to be assessors as additional tasks for instance, assessors of BAN-PT (Higher Education - National Accreditation Board), reviewers of di DPT DIKTI and other important tasks from the government. As a result, the classes of those assessors and reviewers may be left behind.**

**Other important points, LMS is technologically and environmentally friendly as less paper is used. According to a colleague of the Faculty of Forestry, one of their important research findings is that one tree which has diameter 30 cm and height of 18 meters, will produce 873 rims A4 paper, 70 grams. If 30.0000 of Hasanuddin University Stakeholders do not use a paper daily, for one year Hasanuddin University will save 283 trees. We help Faculty of Forestry not to cut those trees yearly. Can you image how many trees we can keep? The development and capacity increase of LMS as one of learning media at Unhas is a nonstop development of its program, management and infrastructures, for instance network and Personal Computer (PC) provision in several areas of learning such as library, reading room faculty and study program.**

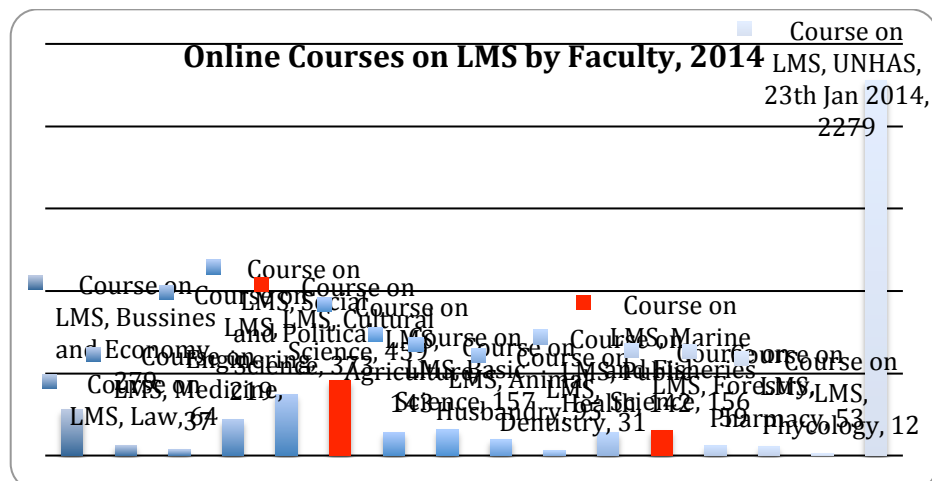
**Moreover, internet accesses are also provided around the campus. However, numbers of lecturers utilizing LMS as learning media remain low. Other issue is LMS utilized as supplement in learning process and not a compulsory for teachers. Consequently, many teachers who have basically been trained do not seem to be very motivated.**

## PROBLEM IDENTIFICATION

Since its implementation from 2008 until 2014, numbers of courses registered on LMS are 2279 courses. Besides, several budgeting policies have been issues such as both DPT-DIKTI grant and routine budget for all study programs. In addition, workshop and training on LMS have also been implemented. Numbers of courses registered on LMS, however, are only the names meaning teachers or lecturers have not utilized all the menus provided on LMS.

The LMS utilization as one of the learning tools in supporting the learning process are still far from our expectations. Based on the data, lecturers in average utilize LMS only for saving lists of reading references and submitting students' assignments.

There are only small numbers of courses that utilize all the menus on LMS. Below is the data of registered courses on LMS until 2014:



According to the above table, the research questions come up as follow:

- Why has LMS not been utilized as a compulsory tool in learning and teaching process?
- Why do most of the Lecturers not utilize all menus of LMS?
- Goals
- This action research is intended to change academic culture from not getting used to getting used to. It's realized that technology in learning is not the only one tool to be utilized. However, LMS is considered one of the best tools in supporting the learning process. Therefore, this action research in detail is done to:
  - Utilize LMS as a tool system to enhance learning quality
  - Internalize Learning Management System (LMS) to increase learning quality at Selected Study Program at Hasanuddin University
  - LMS to support Ministry of Education and Culture's decision on Distance Learning under the Law number 24, 2012

- Support research finding of faculty of Forestry to reduce cutting trees through paperless

This action research has a variety of effects and Benefits are as follow:

- The benefits for the team itself that learn to make changes through action research. With this method, the team Unhas ARP team gain knowledge and experience (skill) in changing colleagues' mindset and attitude at Unhas Lecturers Neighborhood.
- The benefit for the university is changing attitude from several lecturers that LMS is needed. It is hoped that changing attitude may affect other lecturers who are not involved in this action research project.

## METHODOLOGY

The performance indicator of this action research is the creation of academic culture in utilizing learning technology, namely LMS. One of the instruments to measure the academic culture is LMS acceptance among lecturers and students. The measure is about online questionnaire, using *Technology Acceptance Model* (Davis, 1989). F.D Davis was the first person who developed *Technology Acceptance Model* (TAM). This model was installed on LMS thus lecturers and students could simply click and fill out the questionnaires. This questionnaire also supports the one issued by LKPP at the end of semester.

TAM was chose as it can explain the attitudes of Information and Communication Technology (ICT) users which consists of *belief, attitude, intention, and user behavior relationship*. Shortly, TAM can express ICT acceptance of users in certain dimensions easily.

Two indicators of TAM are *usefulness* and *ease of use* which will explain user personality. TAM model has 5 models of construct such as *Perceived Ease of Use, Perceived Usefulness, Attitude Toward Using, Behavioral Intention to Use* dan *Actual System Usage* (Kumar Sharma Sujeet, Jyoti Kumar Chandel, 2013). This action research embraced four models except Actual System Usage.

Another method used to collect data was Focus Group Discussion (FGD). FGD allow ARP team members to collect data from a variety of perspectives at the university.

## Location

The research location was at Hasanuddin University in which LMS server also is located. Lecturers and students are also parts of the university. Respondent at the beginning the research, there were only respondents from two study programs, Arabic and Fishery Resources Utilization.

However, in the middle of research process, respondents varied from almost all study programs. Numbers of respondents filling out the questionnaire from May to September 2015 were totally 711 respondents consisted of 59 lecturers and 652 students.

### **Data Collection**

Data collection techniques were done in several ways, which Focus Group Discussion (FGD), Interview and Survey. FGD was carried out and attended by Rector, Vice Rectors, both Dean Faculty of Letters and Dean Faculty of Marine Sciences and Fishery as well as lecturers from both study programs.

Moreover, FGD was also carried out for lecturers involving in the research.

### **Data Analysis**

Data gained from FGD and survey uses TAM model and then is analyzed. Data collected was reduced and made into units and orders. Grouping data into units is to ease the team to list data as needed.

### **Implementation Phases**

This action research was carried out since end of 2013 and will last in October 2015. Several activities have been done as follow:

- **Major Activity in 2013**
  - During the year of 2013, there were three activities done as planned. Those activities were periodic meetings with university and faculty leaders. In addition, meetings also were done by ARP team members and lecturers involving in the research.
  - The next activity was disseminating Ministry of Education and Culture regulation number 24 in 2012 about distance learning. This action research was also spread through social media such as Facebook.
  - Besides, there was also an evaluation on three components of e-learning such as software, hardware and brain ware that was periodically implemented. Challenges found in the implementation many times happened such as a lecturer that forgot the password should have got faster services. In this phase, the policy on LMS utilization was proposed to Rector.
- **Major Activities in 2014**
  - The policy by Rector in 2013 was issued. Guideline book for LMS utilization was published for 2014 fiscal year. With the book, all study programs could implement trainings and workshops on LMS. As a result, courses registered on LMS increased high enough. However, after looking up, some courses had no names; curriculum codes even courses without lecturers were found. This situation leads to LMS data cleaning. The technical barriers on uploading courses on LMS can be understood as a result of workshops. The cleaning must have been done.
  - The workshops and trainings implementation resulted from uploading files as references of courses. In this process, it was found that lecturers encountered obstacles and challenges for example the power were suddenly off which did not enable them to access LMS.

Therefore, LMS off-line was needed to enable those lecturers utilize LMS. The off-line LMS was installed into a flash disk application.

- **Major Activities in 2015**
  - In 2015, the action research has reached data collection phase. The collection aimed to measure the acceptance of LMS by lecturers and students. TAM model was chosen and implemented previously even though its price was quite expensive.
  - In addition, LMS was proposed to LKPP (The Institute of Educational Development Studies) to be one of the subjects or materials taught in training of Applied Approach (AA), a training to increase lecturers' capacity building. This fact makes LMS sustainable and will continuously taught in the training which is a compulsory training for any lecturer wishing to be promoted to the next rank/level of employment such as *Asisten Ahli* (Permanent Lecturer), *Lektor* (Assistant Professor) *Lektor Kepala* (Associate Professor) and *Guru Besar* (Professor).

## **MAJOR FINDINGS AND ANALYSIS**

The action research implemented for almost two years has found several findings such as:

- Policies that determined changes in academic culture,
- respondents increased,
- A very high level of LMS acceptance as learning tools,
- changes in academic culture in utilizing LMS to increase learning quality.

### **Policies That Determined Changes in Academic Culture**

Since LMS was initiated in 2009 and began to be launched its utilizations at the university through a variety of different programs and grants, few lecturers take benefits from it. Lecturers utilize it only for saving reading materials/references and submitting students' assignment. The instructions from the university leadership to increase learning quality were not implemented by lecturers.

As a matter of fact, the existence of LMS which is neat and complete enough was not maximized. Along with this issue, the action research done by Unhas ARP team members with the support of USAID HELM and DIKTI is to change the lack lecturers' motivation in utilizing LMS. The action research focused on changing academic culture of the university in order to utilize LMS familiarly in their teaching and learning process. HELM supports, directs and monitors the ARP team members to reach the targets of this action research which is to change academic culture in relation to LMS utilization.

In 2013, several actions were done to guard changes in academic culture which has been explained in phases above especially important meetings with all leaders at the university, beginning from Rector, Vice Rectors, Deans, etc.

The meetings resulted from policy making such as Rector's decision in LMS utilization. To follow up this decision, the guideline book was established and became all study programs' references. This book contains all issues related to PPKPS (Program of Capacity Building for Study Programs) in 2014.



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36	6/25/15 12:48	YUNI ANDRYA NIA	5	5	5	5	Mahasiswa		5	5	5	5	5	5	5	5	4	5	4
37	7/7/15 9:59	HAMRI	5	4	5	3	Mahasiswa		3	3	5	4	3	4	3	5	2	4	2
38	7/19/15 7:38	Muhammad Erdin	1	1	5	5	Mahasiswa		5	3	3	3	5	5	5	5	3	3	3
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44	Average	4.07	3.76	4.01	3.74			3.65	3.63	4.03	3.89	3.67	3.91	3.46	3.82	2.98	3.95	3.31	
45																			
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48					UNHAS														
49			Students	27,000			652												
50			Lectures	1,672			59												
51			TOTAL PARTICIPANTS:				711												
52																			

UNHAS

Students 27,000 652

Lectures 1,672 59

TOTAL PARTICIPANTS: 711

Data Easy of Use Usefulness Attitude Intention to Use Dosen Mahasiswa

As mentioned earlier, numbers of respondent came from two study programs, both Arabic and Fishery Resources Utilization.

**There were 711 respondents totally which 59 were lecturers and 652 were students. Below is list of respondent who filled out the questionnaire:**



Numbers of respondents were collected since Mei until end of August 2015. Based on the respondents' percentage, it shows an ideal number as known that filling out the online questionnaire was not a compulsory.

This number will remain increased The ARP team decided to stop the survey by the end of October 2015. Closing the survey does not mean deleting the questionnaire from LMS system.

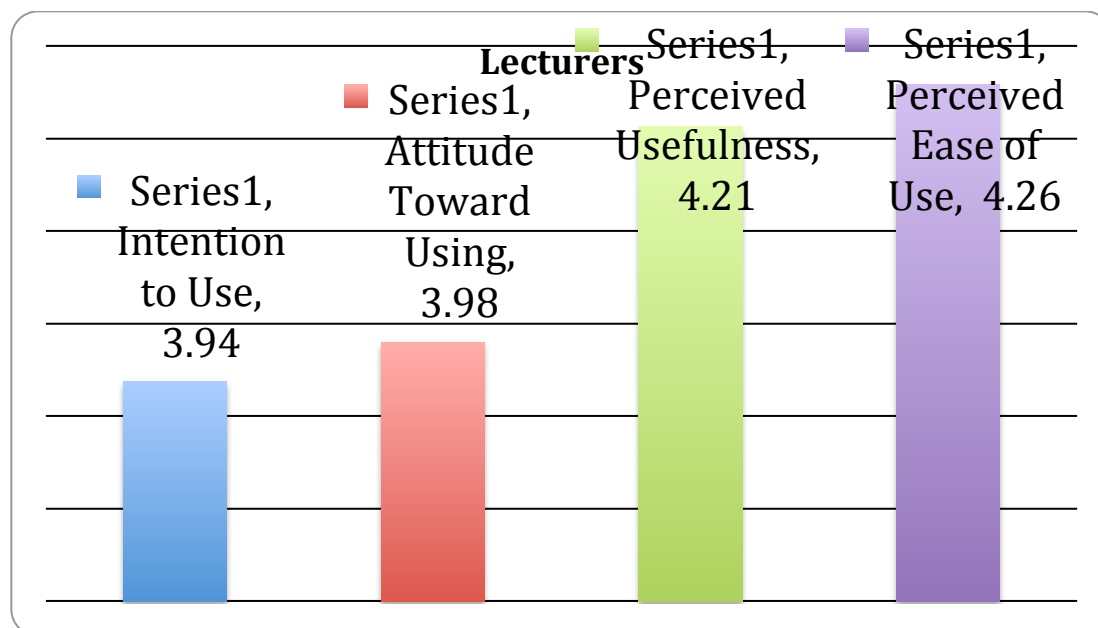
The closing is related to action research project done so far. Online data generated by lecturers and students will be continuously collected to evaluate the LMS sustainability.

### **A Very High LMS Acceptance as Learning Tool**

According to the online survey which was based on TAM model, it can be concluded that LMS is well accepted by lecturers and students at the university.

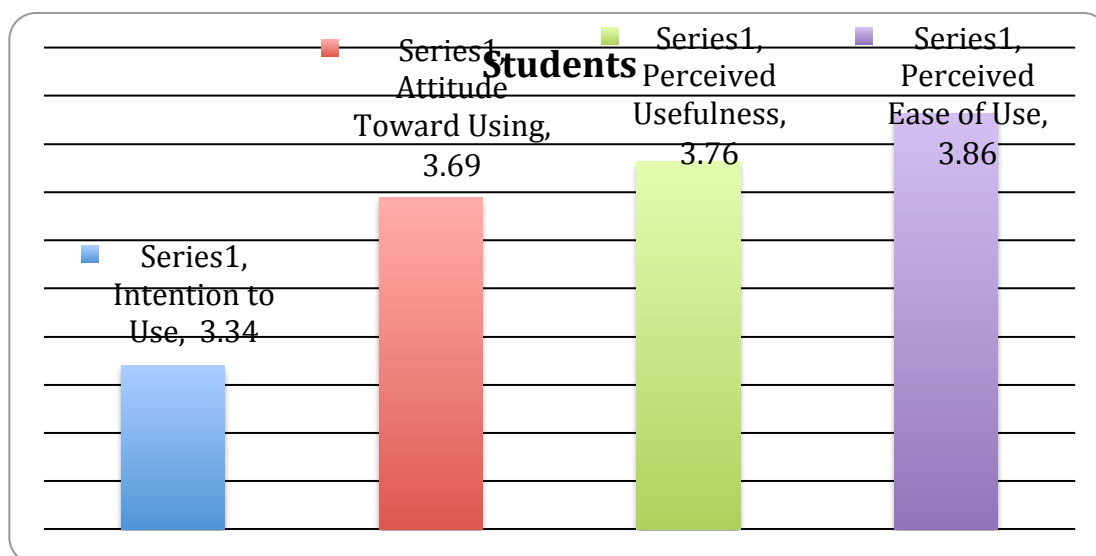
Ranges (scales) of answers are Strongly Disagree (1), Disagree (2), Less Agree (3), Agree (4) and Strongly Agree (5).

Below are the survey results of LMS acceptance by respondents filling out online questionnaire. First, survey of lecturers:



Meanwhile, survey of students LMS acceptance as follow:

Based on the table above, 3 scales (Attitude Towards Using, Perceived Usefulness and Perceived Ease of Use) show that LMS as a learning tool is well accepted among the lecturers and students at the university. This acceptance should be maintained to sustain LMS utilization



### Change in Academic Culture in Utilizing LMS to Increase Learning Quality

Fellow lecturers have participated in the workshops/trainings reported that LMS was very useful in the learning process management. This statement is along with the increase numbers of courses registered on LMS from time to time. It cannot be denied that there several study programs many not show any increase in numbers of courses but the utilization of all menus has been maximized especially in Arabic Study Program.

The increase of LMS utilization can be marked by utilizing all menus especially for those traveling lecturers around the country. Those lecturers at the same time were assigned by the state to assess or review other higher education institutions. Maximizing the menus has been increased especially at the Arabic Study Program where journals have been linked to LMS and save the file of video on the demands.

The maximum utilization of LMS menus cause several lecturers with multi tasks or responsibility can still run the long distance class. Menu of document is maximized as well as menu of Forum where all LMS users can discuss directly (synchronous) with other users in his/her groups or to the entire users of the course. By utilizing LMS this way, the learning process can be maintain with the mixing teaching methods that is called blended learning nowadays.

### Lessons Learned and Best Practices

Several important lessons learned and best practices that were gained from this ARP as follow:

- Active listening which means listening and responding inputs, feedback, suggestions or constructive critiques as well as questions from LMS users. Based on the survey, users suggested the addition in bandwidth capacity. Moreover, the power that is often off during the learning process was also a feedback that needs to be addressed to enable users to access without any technical barriers.

- This action research affects the service of persons in charge in university e-learning division. For almost two years of this research leads to LMS software step by step evaluation. This evaluation is not only focusing on software but also hardware and brain ware (lecturers and students)
- Evidently, changes in academic culture can be done from study programs even from any course. This can be understood that not all lecturers were born in the era of Computer and Information Technology which develops so fast.
- Changes in academic culture can be accelerated by showing attitude and support from the higher education institution leadership.

## CONCLUSION

### Summary

Arabic Department is considered the most unique one at Hasanuddin University. This study program (SP) in general rarely catches people attention for long time. It became people's center of attention when getting accredited with "A" by BAN-PT. The strength of this SP is utilizing Learning Management System (LMS) as a tool in learning process. In addition, another study program involved in this research is Fishery Resources Utilization which is along with Arabic study program to be pilot projects.

Several teachers, however, engage in many multi tasks both in local and national activities. As a result, the class may be left behind by those travelling teachers. In addition, based the regulation issued by the Ministry of Education and Culture (MoEC) in 2012 about Distance Learning may give broad chances of those teachers to grab. This SP also is among 10 PSs conducting distance learning in Indonesia in 2012. Other important point, LMS is technologically and environmentally friendly as less paper is used.

Other issue lying is LMS at Hasanuddin University is utilized as complementary in learning process and not a compulsory for teachers. Consequently, many teachers who have basically been trained do not seem to be very motivated. On top of that, to avoid those types of teachers, Rector's Letter of Decision (LoD) is urgently needed.

In regard to this need, several activities have been conducted to internalize Learning Management System (LMS) in order to increase learning quality at Selected Study Program at Hasanuddin University.

Those activities are: presentation in front of USAID regarding the achievement of action research, evaluation and conducting assessment in regard to the quality of Learning Management System (LMS), dissemination through social media, a series of Workshops on LMS, data cleaning and backing up, uploading courses on LMS, monthly meeting and survey on students' satisfaction in utilizing LMS

A Survey has been conducted by using Technology Acceptance Model (TAM). This TAM consists of Perceived Ease of Use (PEU), Perceived Usefulness (PU), Attitude toward Using (AtU), and Behavioral Intention to Use (BIU).

Scales used is liker ranging from 1 to 5. Surveys show that Perceived Ease of Use reaches 4.33; Perceived Usefulness reaches 4,18; Attitude Toward Using reaches 4,22; and Behavioral Intention to Use reaches 3,86. These percentages indicate a high student's satisfaction especially in the first three constructs. For that reason, technological variables are not the problems.

The researchers most likely conclude that the policy from the leaders has to be strict, not only do support the LMS utilization but also issue the decision letter stating that LMS is a compulsory learning tool to support the learning process at Hasanuddin University.

### **Recommendation**

There are several recommendations needed for further development and management such as;

- Monitoring and Evaluation (Monev) on LMS Utilization is needed which allow Monev members to monitor the performances of lecturers dealing with LMS,
- Collecting data periodically, data on LMS will continuously on the daily basis, thus ARP team members need to collect it periodically,
- Continuous Reward giving also plays significant role to maintain lecturers motivation and 4) Making LMS is a part of the requirements for lecturers' promotion.

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## EXAMINATION ETHICS IN OPEN AND DISTANCE LEARNING INSTITUTIONS

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### ABSTRACT

Students at every level of education, including the ODL system, tend to study to pass examinations. They tend to look for the easiest way out of challenges. As result, they tend to make use of the 'short- cuts', which can lead them to do things which are not permitted in the school system. These include examination malpractices and cheating. In this paper examination in ODL, issues in the administration of examinations in ODL, ensuring high quality examination system, characteristics of a good examination system, and examination ethics in ODL system and stages of examination ethics are discussed.

**Keywords:** Examination, examination ethics, open and distance learning, institutions, quality.

### INTRODUCTION

This age is rightly described as a multi functional age. This is because human beings of this age engage themselves in so many activities at the same time. For instance, a student is doing his assignment, at the same time his earpieces are on his ears as he is listening to music and discussing with another or watching television. A learner in ODL is studying, working and at the same time taking care of his responsibilities in the family and society. As a result they tend to look for the easiest way out of challenges. They tend to use the short-cuts. Most of the times, these lead them to do things which the older society frowns at. In the ODL system, short-cuts lead to exam malpractices and cheating.

In many countries, today, including Nigeria, exam malpractices have taken an alarming dimension.

According to Agunwa and Ademola (2014) exam malpractices has advanced beyond the practice of students bringing foreign materials into exams halls, copying from other students, assaults an intimidation of invigilators and supervisor. It has advanced into a lucrative and organized criminal activity.

**The scourge of exam malpractice and academic dishonesty is very large. It is also pervasive with every level of education affected. It starts from primary to the tertiary institutions. This is a problem which is not restricted to any one country, but that of global proportions. At present, exam malpractices are at such a level where admissions, training, assessment, certification, registration, and regulation processes are hopelessly compromised.**

**According to Agunwa and Ademola (2014) it involves fraud, malpractices, dishonesty and corruption relatively to sale of admissions, teaching malpractices, continuous assessment, automatic promotions of students from one class to another, leakage of question papers, impersonation, alternative to practical, sale of grades and results, sale of honorary degrees, sale of handouts, sale of favorable inspections and accreditation reports, sandwich courses and certificate forgery, hacking into computer data base of public exams boards, extortion of money from candidates by examiners, supervisors and invigilators.**

**It is very sad to note that almost all categories of stake holders in education are represented in the chains of perpetrators that make up exam malpractice syndicates.**

**These include parents who provide the funds which the students use to fund the crime. It include officials of exam board who supply leaked question papers to the candidates Or accredits unsuitable schools as centers compromise computer security systems.**

**What about officials of education ministries departments and agencies who compromise or refuse or neglect to do their oversight functions of supervisions or accreditation to maintain standards and quality.**

**Where do we place school proprietors' who offer their schools as exam magic centers for mass cheating in public exams?**

**What about principles and teachers who facilitate mass cheating in their schools?**

**Where do we place supervisors and invigilators who extort money from candidates or close their eyes and ears so as not to hear, see or report cases of exam malpractices?**

**The list is endless as it includes community leaders who negotiate how much candidates in their communities or schools pay to supervisor's lectures in higher institutions are not left out. They sell handouts and refuse to teach their courses.**

**The academic and non academic staff of higher institutions who sell or facilitate the selling of admissions, grades, results, degrees including honorary degrees as well as some staffs of regulatory agencies who sell favorable inspections and accreditation reports, where do we place them. The pupils, students and candidates who are the final consumers of the diet of malpractices are not left out in this list. Nor the accreditation officials who receive fat envelopes and write reports which are not related to their findings.**

**This goes to the buttress the findings of Okonkwo (2014) and Agunwa and Ademola (2014), that the cancer of exam malpractices has spread to all facet and categories of professionals.**

**The healthcare professionals including medical doctors, pharmacists, medical laboratory scientist, nurses; even the building professionals including building g engineers architects, highway engineers; aviation professionals; public administrators, judicial officials and lawyers, corporate managers, accountants, bankers, politicians among others are all affected in this malaise.**

**This is because they all pas through the same odd and examination system. It is a very serious damage to the society when professors, lectures and teachers emerge through exam malpractices and academic dishonesty.**

**This is why Eghagha (2014) lamented the increase in exam malpractices index every year, describing exam malpractice as a universal disease. It has become a very serious challenge to academics. To this affect, Onyechere (2011) proposed an inspired ethics-friendly education and exam are for all stakeholders to bond and act together as a formidable army of exam ethics to defend the integrity of education and promote best practice in education system.**

**The basic goals of education include the inculcation of the right type of values and the attributes for the survival of the individual and the society. These include the training of the mind in the understanding of what the world around as well as the acquisition of appropriate skill, abilities and competence both mental and physical as equipments for the individual to live in and contribute to the development of his society (NPE2013).**

**Education has an essential role of producing leaders, professionals, workers and citizens with the character and competence to move human civilization forward. It is therefore the duties of those involved in the delivery of education service to contribute to this sacred role and responsibility of the education sector.**

**There is no success without challenges. Therefore education institutions and agencies must rise to the challenge of delivering quality education, if the education sector is to fulfill responsibility of producing change agents with the character to shun corruption and the competence to deliver transformation.**

**The biggest challenge is the growing deficits of ethics, integrity and best practices which are symbolized by the epidermis of systematic exam malpractices and academic dishonesty.**

## **EXAMINATION IN ODL**

**Examination in ODL can be regarded as public exams. This is due to the large number of learners scattered all over the country. These learners are located in both rural and urban set ups. They are both young and elderly. According to Okonkwo (2014) the main purpose of exam in ODL is:**



- **Selection:** To select learners for the next level of education.
- **Certification:** To show evidence that the learners have certain level of achievements.
- **Control:** To facilitate tailoring of content and “spirit” of the curriculum to the national goal.
- **Motivation:** Achieved by providing clear goals to strive for; a sense of purpose, and tangible incentives and rewards.
- **Monitoring:** Examination results are used to
  - Gauge changes in achieved all standard
  - Hold all institutions accountable for their learners’ achievements.

We need to note that exam in ODL are very important because;

- The results of those exams help in determining the future education, vocational or career as well as the survival chances for the state holders.
- ODL institution’s reputations may be affected by the learners’ exam results
- Feedback from the exam results may be subjected to class scrutiny by stake holders because exam related data can reveal the strength and weakness.
- Exam materials, in addition to qualitative and quantitative feedback can help ODL institutions to improve their efficiency and effectiveness.

### ISSUES IN THE ADMINISTRATION OF EXAMINATIONS IN ODL

For exam in ODL to solve the very important purpose for which it is meant to serve, considerations should be given to:

#### Security

As earlier stated the nature of ODL exams manifest more like public exams. As a result leads to greater risk of malpractices if not adequately controlled. This brings pressure to bear on the directorate of examinations and assessments (DEA) to maintain proper security, before, during and after examinations. To this effect, areas of concern include; but not limited to;

- **Question Paper Setting:** Examinations questions may leak from the lectures that set the questions, and/or moderately panel members. Therefore, the following precautionary measures should be taken.
  - Reduce the number of persons coming in contact or seeing the questions and the question papers.
  - Closely monitor those setting the questions in house.
  - Commission several periled versions of each question paper and choose one of them randomly. And/or
  - Produce question papers from large item bank.

- **Question Paper Printing:** Examination questions may leak from printers, DEA staffs handling the papers among others. Therefore, secure in-house facilities for printing. In addition use 'just-in-time' printers. This requires that the printing machine should be in good working order all the time.
- **Question Paper Distribution:** Question paper may be leaked while in transits or storage. Therefore take the following precautions:
  - Use secure transporter such as banks or the military to distribute the question papers.
  - Use reputable private courier.
  - Distribute just in time.
  - Deliver to banks for storage.
  - Allow collection from regional collection points just before the examinations.
  - Use tamper evident bags and box for distribution.
  - Where facilities are available send the questions electronically to examination centers when it is time for each examination. The centers will print out the question papers according to the number of candidates just in time for the examinations to take place. This is how it is done in National Open University of Nigeria (NOUN).
- **Supervision of Exams:** An examination supervisor or invigilator may assist learners or may allow or condone cheating. Therefore, the following precautionary measures should be taken.
  - Appoint staffs of high integrity as supervisors.
  - Arrange important monitoring of examination venues by other staffs of high integrity.
  - Develop regulations and sanctions to guide the conducts of both staffs and learner's during examinations.
  - Apply sanctions as at when necessary.
- **Examination Proper:** There are possibilities of learners cheating or cases of impersonations.

Therefore, take the following precautionary measures.

- Use learners' passport on their registration form and the exam room entry card or photo card to identify candidates.
- Cross check learners handwriting and signatures.
- Apply sanctions where necessary.

Cheating in the examination room can be in the form of copying from another learners papers (girafing) coming into the exam hall with implicating materials, copying from text or note books, using hand phones, discussing the answer among others.

These can result if:

- **The Invigilator Shows Signs of Uninvolvement.**
  - **The Supervisor Condone Cheating or Overlooks Them,**
  - **The Examination Hall Is Overcrowded and Not Conducive Etc.**
- **Return of Scripts:** Answer scripts may be amended after the exams are over. Therefore, appoint supervisors with high integrity. Also reduce the time allowed for the return of scripts to the making centers to the nearest minimum.
  - **Marking:** Markers may favor recognized candidates. Therefore, as much as possible make scripts 'anonymous' by obscuring the names, using coded numbers and matriculation numbers. Again use centralized or conference marking with supervisors. Reduce the marking of scripts at home.
  - **Data Entry:** Staffs concerned may enhance or alter the marks of favored candidates. Therefore apply strong sanctions against those who tamper with marks. Make sure the system is computerized rather than the use of materials.
  - **Exam Result Processing:** Staffs involved may enhance or alter the marks of favored students. Therefore, apply strong sanctions against those involved. Again make sure the system is computerized as much as possible.

### **Packaging and Distributing**

The packaging and distributing of examination papers, especially the pen and papers, is a very difficult task. It is a high volume activity which requires a high level of accuracy. In addition, it carries a high risk of leakages. The difficulties are more in the remote areas and/or with many study centers all over the country taking the same examinations simultaneously. Therefore, activities of interest are:

- **Identification of study center question papers:** This makes use of an accurate packaging list prepared for the dispatch of question papers. Absence of an accurate, computerized database makes this very difficult and error prone.
- **Packaging of question papers:** Questions to be considered include- who does the packaging? Are spare papers included? Are papers packed in paper envelopes sealed? The exact number of question papers required plus a fixed number of extra papers should be packed. This should be done in plastic tamper-evident bags. Where paper envelopes is used, they should be sealed with security printed tapes.
- **Distribution of packed question papers:** Questions to be considered here are: How far in advance of the first examinations is the question papers distributed? Who does the distribution? The distribution of the question papers to the study centers or examination venues should be done as close to the first day of examination as possible. The distribution can be done using reputable courier service, other secure services like the banks transportation system can also be used, and institution transportation may be employed in the distribution.

- **Question paper at the regional centre and study centers.** The questions to be considered here include: - is the question papers delivered directly to the study centers or regional centers? Who is responsible for them? Study center directors should be responsible for the safe storage of exam papers delivered directly to their study centers. On the other hand if the question papers are delivered to the regional offices, the study centre directors should be responsible for the collection as at when needed.
- **After the exam:** Question to be considered include: - are unused question paper returned to the exam unit in the head quarters? How are answered scripts returned to the head quarters? When unused question papers are retained by the study centers, it makes it easier for the learners to access and use them for study purposes. But when question banks are used, the study centers may be required to return all unused question papers. However, it is practically impossible and administratively difficult to prevent the learners from copying the questions from the unused question papers before they are returned to the exam unit of the institution.
- **Report writing:** - it is very important that a report is written at the end of the examination exercise. The report should include:
  - **assessment of the effectiveness of the current practices**
  - **Identification of the problems with the implication of existing rules and regulations.**
  - **Establishment of the basis for review of regulations to ensure better efficiency.**

Therefore, the report should include challenge incidences.

- **Conduct of learners and invigilators.**
- **Adequacy or inadequacy of accommodation facilities and exam materials.**
- **Course examined and relevant numerical data such as number of scripts or candidates, invigilators among others.**

## **ENSURING HIGH QUALITY EXAMINATIONS SYSTEM**

According to Okonkwo (2014) a high quality assessment system is essential for a high quality education system. This is done cheaply. It requires very high level of professional and administrative resources. It's also an important requirement for Open Distance education and Learning institutions to develop assessment hand book which consist of rules, regulations and standards to guide the examination processes.

There is also a need for the instructions to constitute monitoring bodies or committee for the purpose of monitoring exam or exam related processes to ensure quality and compliance to the laid down rules, regulations and standards.

### **Characteristics of a Good Examinations System**

According to Osuji (2012) and Okonkwo (2014) sources of the key characteristics of good exam system are:

- **Fitness for purpose:** The exam papers and the working scheme or guide should produce scores that are reliable and valid. These could be achieved by ensuring:
  - Evidence of exam technical quality such as reliability, level of difficulty among others.
  - Acceptance by both students and lecturers that the exams are according to the course description and standard.
  - Adequate quality control measures resulting in eliminating of errors on exam question papers to the beeriest minimum.
- **Equity, integrity and stakeholders' confidence:** The conduct of exam in ODL system should be seen as fair. It should achieve a higher level of stakeholders' acceptance and should ensure that no particular candidate or group of candidates is seen to have an unfair advantage over others.

These should be achieved by ensuring that:

- Stakeholders' have confidence in the results of the exam system.
  - There is high level of trust in the honesty of the exam unit, staff, supervisors and invigilators.
  - The exam system has procedures for rechecking of markings or marks put in place as well as appeal procedure.
  - There is evidence of minimal or no resorting to the use of unfair means or cheating by the candidates.
  - There is availability of special support for disadvantaged candidates.
  - The grading system is applicable on equal basis to all learners.
- **Efficiency and cost effectiveness:** The ODL institutions' exam unit should be able to make the best possible use of physical, financial and human resources in delivering the required exam services. The exam should be administered according to agreed schedules. The learners and invigilators should be aware of the schedules for the exams. The exam results should be issued on time. All these could be achieved by ensuring that:
    - The exam unit is sufficiently staffed.
    - The question papers are produced in the most cost effective way without compromising quality and security.

- The exam unit should demonstrate cost effectiveness through its accounting procedures showing breakdown of cost such as staffing, preparation of question papers, printing, distribution, supervision, correcting, research, publication etc.
  - Pre-exam administration processes are carried out effectively.
  - Exam results are issued in time and in the appropriate form for proper decision making.
  - Feedback on exam performance is provided to stakeholders in good time to influence their future activities.
- **Transparency:** The exam process should as much as possible be open to stakeholders' inspection. It should not be masked with secrecy and uncertainty. This should be achieved by ensuring that:
- The marking system and criteria for the award of grades are available.
  - The exam unit maintains record of administrative processes, results and marking scheme or guide.
  - Only staffs of high integrity are engaged with exam process and responsibilities.
  - The institutions handbook on exam processes including rules regulations and standards guiding the administration of exams are widely available to stakeholders, especially the staff and students.
- **Beneficial effect on institutional process:** ODL exam system should as a matter of necessity foster learners' effective study habit. It should ensure regular, systematic, comprehensive, guidance oriented and prompt provision of feed back to the institution for improvement and to the learners' to faster leaning. This should be achieved by ensuring that:
- The exam encourages the development of higher order thinking skills not just recall facts.
  - The exam promotes development of performance skills, practical skills and production skills.
  - The exam promotes self-reliant and self-confident skills.

Therefore a good examination system in ODL gives credence to the products of the system by ensuring quality and credibility on the degrees and certificates awarded by the ODL institutions.

It implies that there is need for rules and regulations to be put together in place to ensure that there is a very good exam system in ODL and the benefits therein; there must be ethics which must be kept or practiced before, during and after exam in ODL.

## **EXAMINATION ETHICS IN ODL SYSTEM**

According to Osuji (2014), exam is the major procedure used for the assessment of ODL students for the purpose of awarding degrees and certificates among other things. The senate of every academic institution including ODL is vested with the authority to organize conducts and control exams and to award degrees and certificate.

Therefore, to maintain credibility, integrity and to ensure quality, the senate of these institutions should prescribe rules, regulations and standards to govern their exams.

This will be presented into the form of exam ethics of the institution. To this effect, exam ethics is viewed as a frame of reference to help in promoting a greater understanding of what constitutes ethical assessment practice.

In other words, ethics simply means the ideals of what is right or what is wrong. It involves regulations, laws and professional codes of conducts. It provides a standard format of moral values and procedures to ensure efficiency.

According to Okonkwo (2014) codes of ethics helps in creating awareness of expected standard that constitute ethical practice and to serve as affirmation of exemplary conduct.

### **Stages of Exam Ethics**

- **Stage 1: Before the exam:** Every ODL institutions should write down what they think should be the ideal practice before exam. These should be in particular reference to :
  - **Planning for the exam:** Setting of questions, moderation preparation, noting the number of students taking the exams per invigilator and per venue, and assigning responsibilities.
  - **Reporting for Duty:** Note the number and categories of staff that should report for duty with regards to exam preparations.
  - **Collection of Exam Materials:** Get the question papers, answer scripts, attendance sheets, report forms, graph sheets, ropes, etc ready.
  - **Preparing the exam hall:** All exam halls should be well prepared with adequate light and space between candidates etc.
  - **Checking the convenience room:** All rest rooms or conveniences should be checked to make sure they are functioning.

Every ODL institution should write down what you think should be the ideal practice in the preparation of exam materials with particular reference to the role of different categories of academic staff.

These include the deans, directors, exam unit staff, these roles include:

- Call for question paper and setting of questions.
- Venturing or moderation of question papers.
- Production of the question papers.
- Packaging of the question papers.
- Custody and distribution of the question papers and answer scripts.
- Handling of exam malpractices.
- Writing of report.

➤ **Stage 2: Conducting the Exam** Every ODL institution should have written down what they think are the ideal practice during exams. These should be with particular reference to:

- Admitting and sitting arrangement of candidates.
- Distribution of exam materials.
- Starting the exam.
- Confirming the identity of the candidates.
- Getting the candidates to sign the attendance sheets.
- Conducts of invigilators
- Collection of answer sheets or scripts.
- Issues of late arrivals, suspected misconducts, illness, convenience breaks etc.

The ODL institution should also write down what should be the ideal practice during exam with particular reference to the atmosphere in the exam hall.

These should include: ventilation, illumination, chairs and table, spacing of seats or seating arrangements, announcements, noise making, other activities that can distract the candidates and disturb exam etiquette in the exam hall.

➤ **Stage 3: After Exam:** Every ODL institution should write down what they think should be the ideal practice after exam with particular reference to:

- Collection of answer scripts.
- Unused question papers and answer booklets.
- Collection and submission of collected scripts.
- Report writing.

They should also write down what they think should be the ideal practice after exam in ODL with respect to the role of supervisors, invigilators, students, ICT staffs, academic staff, school and faculties, departments or units, examination officers, the institutions exam units etc in helping to ensure that appropriate procedures are followed and that the desired goals are achieved.

Collective responses and ability to adopt or adapt the fore going recommendations would constitute exam ethics in ODL.



Nevertheless it is the responsibility of the senate of any ODL institution to have the final say in what should constitute the institutions' community the role of staff (both academic and non academic), students, invigilators, supervisors, deans/directors/head of units or departments exam units, the senate etc.

It is also the responsibility of the senate to specify regulations, rules and standards to guide good practice in ODL assessment of students lay outcomes. These they should do preferably in the form of "assessment handbook".

## CONCLUSION

ODL System is practiced all over the world as institutions of higher education vested with the power to award degree, certificates and other relevant academic qualifications to students who at the end of their programmes are found worthy in character and learning. It implies that for the proper exercise of this power, the ODL institution must try to ensure the maintenance of high standards in the conduct of exams. Hence, there is a need for the institutions to embrace exam ethics. These can be specified as rules and regulations which should be put in place in the form of "assessment handbook". This will help to ensure quality and credibility on the degrees and certificate which the ODL institutions award.

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## **E-LEARNING IN THE AGRARIAN COLLEGE OF MANAGEMENT AND LAW OF POLTAVA STATE AGRARIAN ACADEMY: Approaches to Global Integration**

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### **ABSTRACT**

In the article the author explores distance learning as a form of organization resource-based learning (RBL), in the disciplines of computer cycles for students in the Agrarian College. Is considered the combination of face-to-face and distance learning, providing quality training of future specialists. Analyses the content, types, methods of distance learning, serves the structural scheme of the study subjects cycle computer with resource-based learning. The author offers a way of creating a distance learning course with the help of the Internet service <https://sites.google.com> gives the example of tasks for distance learning.

**Keywords:** Resource-based learning (RBL), distance learning, electronic educational resources, information and educational environment, Agrarian College, distance learning.

### **INTRODUCTION**

In the conditions of informational society and the global integration processes in the educational space is necessary to form a flexible system of continuous education, with the help of which a person can throughout life to improve their professional skills and to be competitive, mobile and creative expert in their field.

The national system of education in Ukraine will become competitive only if they are able to adapt to changes that occur, and the orientation of which is determined by the global development of civilization. The Ukrainian society will have to abandon a number of outdated ideas about what is education and what it means to be an educated person.

The traditional model of education, based on the disciplinary division of knowledge, has been unable to maintain the integral to the profession in which the professional should have fundamental training in several related fields of science or social practice, a good grasp of interdisciplinary perspectives and apply a systematic methodology in solving specific problems.

To solve these problems of Ukrainian education experience will help scientists of the leading countries of the world (Australia, Britain, Canada, Germany, USA, Sweden and others) that offer a focus on modern teaching systems and approaches, in particular the resource-based learning.

M. Weller argues that the resource-based learning (RBL) is an approach to learning where students are encouraged to use a variety of resources (instead of the limited lifetime of individual course) to understand certain concepts, including the use of web resources, discussions, books and magazines.

This approach covers a wide range of students, brings together different approaches and learning styles, encourages curiosity, activity and independence of students (Weller, 2005).

We consider the resource-based learning: a *resource-based learning* (RBL) is a set of forms, methods and means of education, aims at a holistic approach to the educational process that is focused not only on the assimilation of knowledge and skills, but also on the training abilities of independent and active transformation of the information environment by finding and practical application of information resources.

The main characteristic of RBL is that the training is carried out in tandem "teacher-librarian", is characterized by a high level of independence the student and sent to continuous learning throughout life – *lifelong learning* (Kononets, 2012). One of the modern universal forms RBL distance learning is focused on individual needs of students and the use of information technologies, their specialization and further training.

## REVIEW of RELATED LITERATURE

Problems of distance learning and introduction of distance learning technologies in educational process of higher educational institutions is the subject of research of many domestic and foreign scientists: A. Andreev, A. Akhayan, V. Dreyvs, V. Kukhareenko, K. Manzyuk, N. Nuriyev, Ye. Polat, T. Tartarashvili, F. Chetwynd, C. Dobbyn, A. Gaskell, D. Keegan, J. N. Lowenthal, C. Woodleya, C. Meredith, under which distance education is understood as a complex mass of educational services provided to special information the medium by means of transmission of educational information (telephone, radio, satellite communication, etc.).

*Distance learning* is a synthetic, integrated, humanistic learning, which is based on the use of a wide range of traditional and new information technologies and technical means, which are used to deliver educational material, self-study, organization dialog exchange between teacher and student when the learning process does not depend on their location in space and in time, to specific educational institution (Andreev, 1997). V. Dreyvs under distance learning considers the educational process in which a significant portion of the teaching is done by teacher or group of teachers), remote in space or time from the student (or group of students). Modern distance education is carried out mainly with the help of technology and Internet resources (Dreyvs, 2003).

Important is the approach to distance learning as a new form of education along with intramural, extramural, evening forms of education and external studies. This appears to be distance education. Ye. Polat, under which distance education implies a new form of education and sees it as the result, the process and the system simultaneously (Polat, 2006).

As noted by V. Kukhareno, *distance learning* is a new stage of learning, which is ensured by the use of information and communication technologies based on the use of personal computers, video and audio equipment, space technology and optical communication systems (Kukhareno, 2002).

Depending on the nature of the organization of educational communication between participants of the educational process and educational managers and the way the transport system of delivery of educational materials distinguish between *traditional distance learning* and *e-learning (e-distance learning)*.

*Traditional distance learning* – a form of distance learning, in which participants and organizers of the educational process interact primarily asynchronously in time, using as a transport system within the delivery of training and other information objects of the system of postal, telephone, Telegraph communication.

*E-learning* – a form of distance learning, in which participants and organizers of educational process is carried out ndizvo interaction both asynchronously and synchronously in time, using electronic means of delivery learning tools and other information

Today in the practice of the colleges used a balanced combination of these varieties of distance learning with a gradual shift of focus from e-learning through the Internet. According D. Keegan, distance learning is the almost complete absence of permanent study groups throughout the educational process. If distance education was just a learning "alone" which creates an opportunity for personal didactic meetings (Keegan, 1996).

Summing up and analyzing various accepted definition of distance learning" We come to the conclusion that the distance learning is considered scientists:

- As the new organization of the educational process, Based on the principle of independent student learning;
- As a set of information technologies For delivery of students of the basic volume of educational material, Interactive interaction between students and teachers in the process of learning;
- As the new form of teaching, whereby are provided using information technologies Based on the use of personal computers, video and audio input from, Space and optical equipment.
- As a variety of open learning using Computer and telecommunication means enable interactive interaction Teachers and students at various stages of training and independent work of the last with Materials of network , which are prepared teachers.

## **METHODOLOGY**

**Distance Learning opens up new horizons for Ukrainian Education and enables practical implementation one of the leading social problems -to ensure equal rights for every person in the modern educational space.**

**Modern distance education has to integrate psycho-pedagogical, pedagogical, information and telecommunication technologies, to match the level of their development and possibilities of effective collaboration in the creation of a distance learning environment (sometimes called virtual). However, the existing state of development of distance learning in Ukraine does not meet the requirements of society, and educational institutions who need government assistance, coordination, scientific and educational components. Today in Ukraine, not all schools have the permission of the Ministry of education and science of Ukraine for the provision of educational services for distance learning. If we talk about the College, none of them such permission has not. This is why we can speak of e-learning in colleges merely as a form of resource-based learning. Given the current situation in the sphere of distance learning, analyzing the works of scientists, the experience of distance learning courses, it can be argued that while in College, and teachers, and, most importantly, students are not ready to completely switch to a new kind of learning.**

**It is connected not so much with the technical solution of this problem, many psychological unpreparedness of the subjects of the educational process. We are not going so sharply to adopt new forms of training, you need a more complete pedagogical and psychological research in this direction.**

**In the higher education system, despite years of experience, there are ongoing debates on the problems of improving the quality of education of students in agrarian colleges.**

**Today in Ukraine are such form of training -full-time education and correspondence courses. The content, methods and means of these forms of training is not enough focused on the current requirements of specialist training. Among others, there is the view that distance learning is secondary, abbreviated and simplified way of obtaining knowledge and diploma.**

**In the educational process of the College had included the specifics of training, individual characteristics and work environment of the student.**

**As in the whole system of agricultural education in agrarian colleges is still dominated by extensive forms and methods of teaching, not created the necessary conditions for individual self-study, not considered specific students of the correspondence form of training, not considered specific students of day form of education, students on an individual schedule.**

**Not take into account the requirements of modernity in the selection of content, methods and organization of learning.**

For example, at a time when the specialist needs to operate effectively in the modern information society, in which rapidly evolving information and communication technologies (ICT), written tests require students distance learning to submit is written "by hand". Some teachers forbid the use of online resources when writing tests, term papers, reports, work practices, theses and the like. Therefore, in such circumstances, it is appropriate gradual transition to resource-based learning, in which it is possible to eliminate the above drawbacks of the existing system of education in colleges of Ukraine.

In our study we demonstrate experience in the use of distance learning when studying disciplines of a computer cycle, the practice of creating distance learning courses. When you switch to RBL disciplines of computer cycles in the Agrarian College, as shown by our own experience, the optimal form is e-learning.

The *information-educational environment of distance learning* is a set of systematically organized, distributed collateral means of data transfer, information resources, interaction protocols, hardware and software, organizational and methodological support, focused on meeting the educational needs of students. Distance learning provides students the opportunity to study in a convenient location and at a convenient time, and all who wish to constantly improve their professional level taking into account individual characteristics. In the process of teaching the student some of the time independently develops interactively teaching materials, testing, performs audit work under the guidance of a teacher and interacts with other students "virtual" study group.

Note that there are significant differences between distance learning from correspondence courses:

- when the remote training holds joint activities of students in small groups cooperation that part-time teaching is not practiced;
- at remote form practiced systematic discussion of the issues, problems, just interesting proposals in interactive mode the whole group, using forums, chats, blogs, video conferencing, social networking, and distance learning is not practiced.

Distance learning is a form RBL and technological complex based on the principles of open learning, extensive use of computer-based training programs for various purposes, creates with the help of modern telecommunications information and educational environment as a space for the delivery of educational material and communication and provides all opportunities for obtaining academic results of the highest quality.

The main purpose of the use of distance learning in College as a form RBL discipline of computer cycles is to provide access to *electronic educational resources* (learning materials, for playback using an electronic device) through the use of modern ICT and telecommunication networks.

This form RBL involves the creation and use of a single *information-educational environment* containing various electronic educational resources:

- distance learning courses
- electronic textbooks and manuals published on the national educational servers (for various models of distance learning)
- virtual library;
- database of educational resources;
- educational web quests;
- telecommunication projects;
- virtual methodical association of teachers;
- newsgroups, blogs, forums for teachers and students;
- scientific association of students on the Internet.

The specificity of the disciplines of computer cycles in the agrarian colleges is their applied orientation, because the needs of the community identified social order education system for training specialists, including agricultural areas, which would be owned at a high level of knowledge regarding the application of modern ICT in the process of solving the linking of professional tasks. And this is not possible without mastering the knowledge on computer science and its applied aspects, which are reflected in the practical tasks that students must perform.

The quality of performance by students of various types of applied problems, as well as the study of computer science in General, depends on the quality of teaching materials for distance learning. Development of educational-methodical complexes of disciplines for students includes not only mandatory training materials in electronic form for possible use in distance education, but also the adaptation of methods of teaching computer science to students of different specialties:

- formulating the objectives of teaching computer science;
- specification content learning
- selection of training tools (Microsoft Office: MS Word, MS Excel, MS

Access, Adobe Photoshop, 1C: Enterprise, MathCad, Gran1, Compas, AutoCad, ProdictExpert LIGA:LAW, MEGA-NAU, Sketch, SAIL-Management and Marketing, M.E.Doc IS, Delphi, etc)

- the form definition of classes (traditional lecture, video lecture, virtual consultations, practical classes, laboratory practice, virtual tour, interactive Colloquium, interactive discussions, on-line consultations via Skype)
- selection of methods of teaching computer science (problem-search method, case study method, project method, students ' portfolio, web quest, mental maps)
- preparation of tasks and methodical recommendations for the implementation of control of work, individual assignments, essays, research papers.

E-learning is the optimal form of organization RBL disciplines of computer cycles in College not only by correspondence. The elements of distance learning are used in full-time education because they allow:



- additional fastening of skills of ICT use,
- additional fastening of skills of information retrieval from electronic and Internet resources,
- further consolidation of skills, which would help the student to quickly navigate in the information space, to appropriate certain amounts of information and analyze them
- to use the acquired skills in their future professional activity, thereby forming students professionally important knowledge, abilities and skills to work with computers and application programs as important components of information culture of the future specialist.

In the Agrarian College of Management and Law of Poltava State Agrarian Academy, we practice using your own e-learning resources developed by teachers the cyclic Commission of mathematics, computer science and information activities (electronic lecture notes, dynamic Informatics in circuits, electronic textbooks, electronic laboratory workshops, etc). These electronic resources are distributed to students daily learning the first lesson in the classroom, the students of the correspondence form of training on the first day of the session, or, if necessary, are sent during the intersessional period. Note that the form of teaching computer science in College, which use Internet technology, there are:

- fully remote using electronic mail, chat interaction, video, social networks,
- on-campus distance, when part of full-time classes in the classroom is balanced with the number of remote sessions conducted by teacher away from students
- the addition of the internal form of the elements of distance learning, for example, a teacher conducts classes with students in person, but it uses materials from the Internet, the video lectures from educational sites and other Internet resources.

Most commonly used third option, which mainly refers to *Internet education*. Online education can be carried out without the remoteness of the teacher and the students from each other, providing them access to the Internet, for example, with a computer's computer lab.

In this case, the Internet is used as an educational tool that enables the implementation of online education as part of the classroom process.

The method of organization of such classes is easier in comparison with distance learning when the teacher and the student removed from each other, and provides special forms and methods of communication.

The main value of distance learning as a form of RBL students is the opportunity to study at their own pace according to individual educational trajectory.

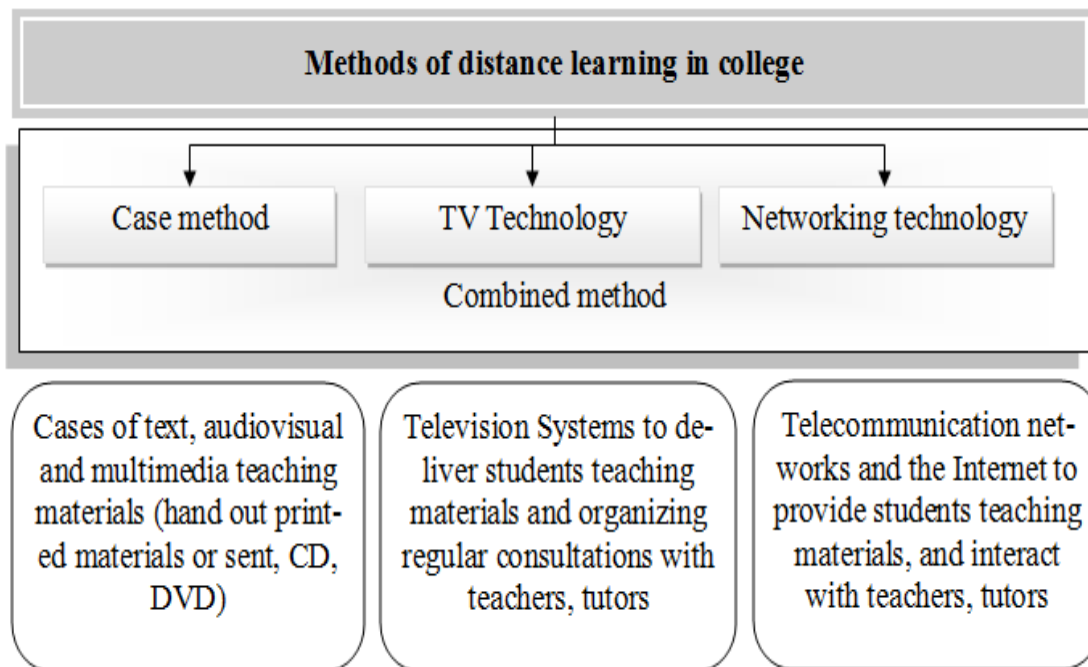
But really none of the existing resource, such a possibility does not provide. The main reasons those colleges:

- no training resources which are full filled with informative, highly structured and have the potential to ensure the formation of the content of the training program in order;
- there is no medium that allows you to effectively create and administer customized training programs at the same time for many students;
- there is no system (organizational, technological, regulatory), which provides for the development, update and administration of appropriate training resources and administration of the process of individual distance learning at the same time a large number of students;
- here is no system of training of Tutors of distance learning.

So the main purpose of RBL disciplines of computer cycles is the organization of the learning process, which focuses on the *use of any convenient for student resources: traditional electronic, media resources, Internet resources, and the like.*

Distance learning in this context offers a wide range of distance learning courses (DLC) available on the Internet that students can choose, based on your own taste and individual selection criteria (availability, visibility, communication with the practice, the availability of videos and the like).

Simultaneous use of different resources in combination with the methods of distance learning (Figure 1.) in College makes possible a comprehensive review of the Chapter or topic, a deeper and more complete study of the discipline as a whole.

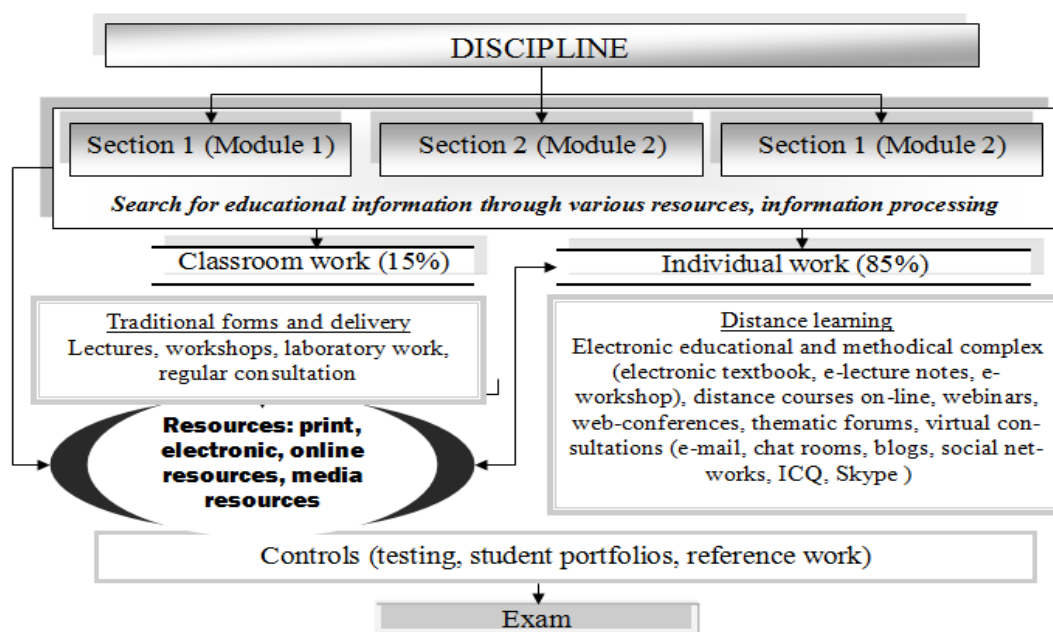


**Figure 1.**  
**Methods of distance learning in RBL in college**

Note that the combined method of distance learning in College is perfect:

- provides an opportunity to diversify the learning process in the classroom
- provides an opportunity to study without leaving the place of residence and in the production process (for students of the correspondence form of training)
- provides broad access to national and world educational resource (Andreyev, 1997).

We offer the following structural scheme of the study subjects cycle computer in College with the use of remote technologies in the context of RBL on the example of discipline "Informatics and computer technology" (Figure: 2).



**Figure 2.**  
Distance learning courses computer cycle in terms of  
Resource-based learning students

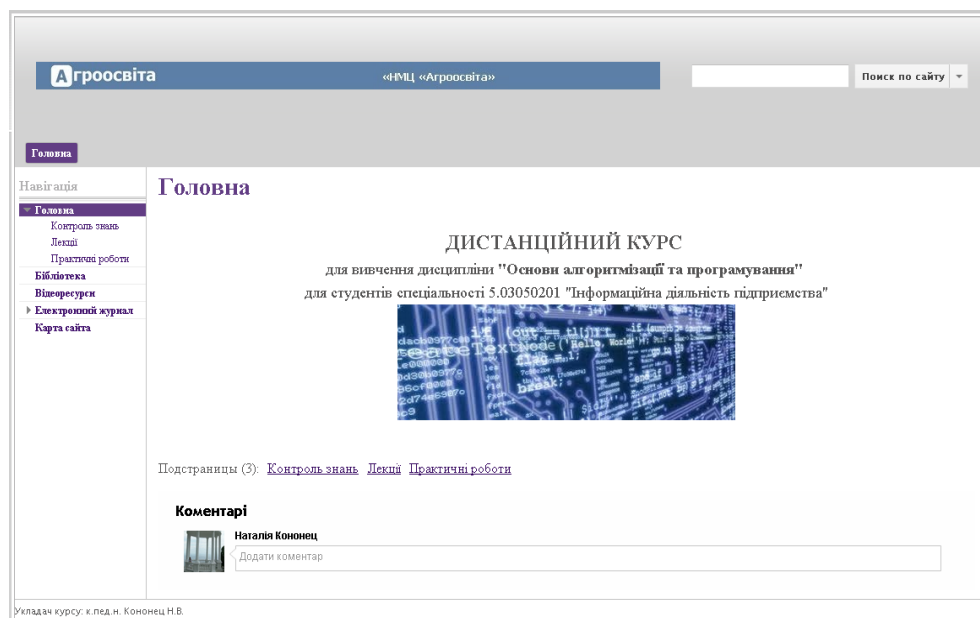
Organization of distance learning in College is a planned, purposeful process of creating conditions that ensure the effectiveness of the subject-subject relations and subject-object relations in distance education. Resource support for distance learning should be viewed as a set of legal, financial, human, material and technical, informational resources aimed at the organization and functioning of distance learning in the education system. It should be noted that in today's difficult financial and economic conditions of functioning of the colleges, the development of electronic learning resources, online courses and their implementation in the educational process of the agrarian colleges is not only pedagogically appropriate activities, but also economically beneficial to the colleges.

The process of developing online courses using free platforms, free software and their further implementation provides economic impact: the creation of electronic means of teaching a new generation solves the pressing problem of providing vocational and theoretical, professional and practical pagevec without requiring financial costs of printing and distribution of educational materials.

Distance learning course (DLC) is a set of teaching materials and educational services that are created in a virtual learning environment for distance learning based on ICT (Kononets, 2015). The main elements of DLC are complex electronic teaching materials and the system of educational services that are available to any student from the Internet. To provide distance learning disciplines of computer cycles in the Agrarian College of Management and Law of Poltava State Agrarian Academy teachers developed and used DLC – specially prepared platforms based on the Internet service <https://sites.google.com>

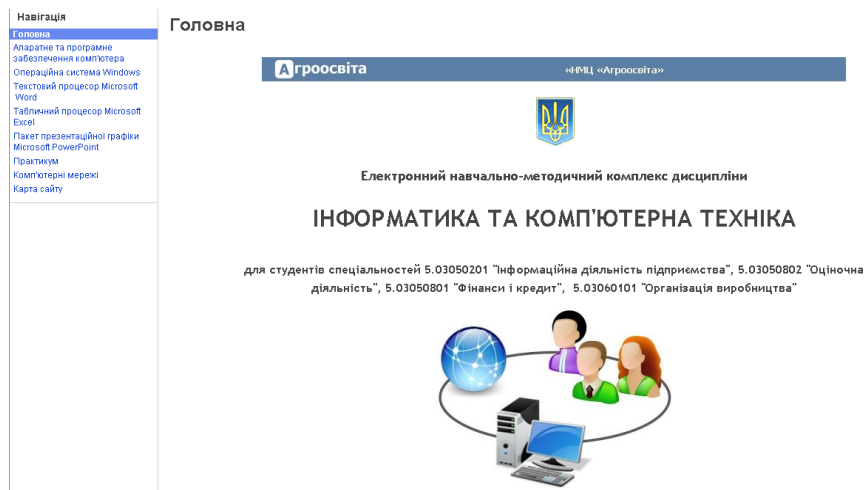
Today in College full-function DLC for the study of such subjects computer cycle:

- "Economic Cybernetics"  
<https://sites.google.com/site/economiccyberneticsakup>
- "Internet technologies in information activities"  
<https://sites.google.com/site/internettechnologiesakup>
- " E-Commerce " <https://sites.google.com/site/elcommerceakup>
- "Information and computer technology"  
<https://sites.google.com/site/informakup>
- "Basics of algorithms and programming"  
<https://sites.google.com/site/programakup/home> (Figure 3.)



**Figure 3.**  
**DLC "Basics of algorithms and programming"**

For the development of distance learning courses we attract teachers from other colleges of Ukraine. For example, DLC of information and computer technology <https://sites.google.com/site/informacup> was developed by two teachers at the same time:



**Figure 4.**  
**DLC "Information and computer technology"**

Kononets Natalia, Ph.D., teacher of Informatics and computer technology, teacher of the highest category, teacher-methodologist of the Agrarian College of Management and Law of Poltava State Agrarian Academy.

Yatskiv Lubov, teacher of the highest category, teacher-methodologist, the Chairman of the cyclic Commission of fundamental and special disciplines of the specialty "Maintenance of software systems and complexes" College Stryi of Lviv National Agrarian University (Figure: 4).

The DLC content the training content is constantly updated, updated training materials simultaneously by two teachers who are in different places of Ukraine, in different colleges, at a distance of 1000 kilometers from each other. An open learning environment distance learning course allows you to make the course informative, interesting, with a deep sense of quality. Two teachers who are working on the track, you can implement your own views on the teaching discipline, to offer our own methods, means and forms of training. It will be pain effective and efficient for students. Teachers in the process of working on remote course share their own experiences of teaching science.

The process of creating online courses using the platform <https://sites.google.com> not difficult and available to any teacher of the College, and most importantly-free.

To create a DLC teacher enough to have a *Google* account, which will allow the use of different *Google* services, namely <https://sites.google.com> To create a DLC, you need to visit the service *GoogleSites* and press the Create button.

The following steps create a DLC is the choice of site template, the site name (site address is automatically proposed service *GoogleSites*), theme (by request of the developer) and enter your code. After that, just press the Generate button and the platform will be created for DLC. Will only have to fill it instructional content.

The edit mode of the page of DLC is activated by using the buttons on Edit page, Create page, or other actions. The edit page of the DLC allows the implementation of various standard objects, gadgets, objects Google to apply specific formatting, insert and format tables, use the layout for the page. The edit mode provides help. Note that to apply the changes click on the Save button. Adding pages to the DLC by using the button to create a page that opens a window to enter the name of the page template and where it will be located in the overall structure of the DLC. Note that for easy placement training and methodological content of the DLC should just choose a template file Cabinet.

The Share button allows you to grant (or restrict) access to a remote platform to students or teachers. So, teachers who teach the same discipline, can simultaneously and with equal rights to work on the development of the content of the DLC. Students are provided with restricted rights: they can only view, read or download certain information, but cannot make changes to the content. Practically, the student gets access to a recreation center on the first lesson of the subject, but after studying it, the teacher closes the access to the DLC. For example, the platform of DLC for the discipline of information and computer technology (page edit mode of course, which is created by two teachers), depicted in Figure 5.

ENMKD-IKTacup

Пошук на сайті

Навігація

Головна

Апаратне та програмне забезпечення комп'ютера

Операційна система Windows

Текстовий процесор Microsoft Word

Табличний процесор Microsoft Excel


Пакет презентаційної графіки Microsoft PowerPoint

Практикум

Комп'ютерні мережі

Карта сайту

Текстовий процесор Microsoft Word



*Microsoft Word (MS Word, WinWord або Word)* - це текстовий процесор, що випускає фірмою Microsoft, який входить до пакету Microsoft Office. Перша версія була написана Річардом Броді (Richard Brodie) для IBM PC, що використовувались в DOS, у 1983 році. Word - це повністю WYSIWYG-редактор (принцип "What You See Is What You Get" - "одержую те, що бачу"). Microsoft Word 2010 пропонує найкращі рішення: розширені функції для створення документів професійної якості, простий спосіб спільної роботи з людьми і доступ до файлів майже з будь-якого місця. Розроблений для надання кращих інструментів форматування документів, Word 2010 допомагає читати і писати документи більш ефективно. Можна зберігати документи в мережі Інтернет і отримувати доступ до них, редагувати їх і забезпечувати спільну роботу з ними майже з будь-якого веб-браузера. Microsoft Word 2010 пропонує безліч нових і вдосконалених засобів, які допоможуть вам додати вражаючі ефекти в текст документа. Тепер ви можете використовувати багато з тих же ефектів для тексту та фігур, які можна вже використовувати для фотографій, діаграм і графіки SmartArt.

Додати файл

Додати посилання

Додати з Диска

Перемістити до

Видалити

Підписатися на зміни

<input type="checkbox"/>	1 Текстовий процесор Microsoft Word 2010. Можливості, інтерфейс програми.pdf	843КБ	версія 1	23 квіт. 2015 р. 09:56	Любов Яцків
<input type="checkbox"/>	2 Текстовий процесор Microsoft Word 2010. Створення нового документа та ввід тексту.pdf	409КБ	версія 1	23 квіт. 2015 р. 09:57	Любов Яцків
<input type="checkbox"/>	3 Табличний процесор Microsoft Word. Редагування тексту.pdf	662КБ	версія 1	23 квіт. 2015 р. 09:57	Любов Яцків
<input type="checkbox"/>	4 Текстовий процесор Microsoft Word 2010. Форматування текстового документу.pdf	1018КБ	версія 1	24 квіт. 2015 р. 01:47	Любов Яцків
<input type="checkbox"/>	Лекція з теми "Текстовий процесор Microsoft Word".pdf	341КБ	версія 1	20 квіт. 2015 р. 09:53	Наталія Кононець

Figure 5.  
Page DLC in edit mode

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The main advantage of using the platform <https://sites.google.com/> to create a distance learning course is the versatility. DLC can be made available for all Internet users, and then such a course will be powerful electronic database of training materials, electronic educational methodical complex of discipline. DLC can be made private, the developers of the course may require registration for access to training materials, and then study the discipline can only those students to whom the teacher provides access. For access to e-learning course, a student must have an account in Google.

The problem of organization and implementation of distance learning in the agrarian colleges of Ukraine devoted to workshops auctions pedagogical ideas on the theme "Information and communication technologies in the educational environment", which were organized and conducted by the State Institution "Scientific and Methodological Center of Information-Analytical maintenance of Activity of higher educational institutions "Agroeca" of the Ministry of education & science of Ukraine (March-April 2015). Read more with the plan of the seminar can be found on the website [http://www.agroosvita.com/pedagogichniy\\_dosvid](http://www.agroosvita.com/pedagogichniy_dosvid) On-line broadcast of the seminars is also available on the website: <http://www.agroosvita.com>

Functionally the DLC are designed to provide on-line exchange of educational information between teachers and students in the educational programs of higher educational institutions, as well as administrative on-line monitoring of their implementation.

The platform provides distance learning courses:

- on-line registration of students in a virtual environment
- on-line registration by teacher curriculum of the discipline
- preparation and registration of the teacher e-learning (training material, guidelines, test tasks, test questions and exercises, and more)
- open teacher access to e-learning course
- on-line newsletter jobs to students on their virtual platform
- on-line sharing and sharing documents
- on-line control (electronic journals, messaging) the progress of the students of control tasks
- on-line work on network projects
- virtual control of the Department (cyclic Commission) for the implementation of the curriculum
- the organization of virtual electronic library of educational material and the author's on-line downloading of study material for free distribution
- author on-line monitoring of the functioning of a library of training material
- on-line transmission of information messages about the organizational issues of the educational process on the virtual platform participants
- virtual mail server, where each participant can send or receive private message. DLC are designed using the service <https://sites.google.com/>, provide:

- careful planning of students, its organization, clear planning objectives and learning objectives;
- delivery of necessary teaching materials over the Internet;
- interactivity between the student and teacher (tutor, manager), feedback between student and teaching material;
- the possibility of individual, collective, group training.

The main advantage of distance learning is the independence of its members from the geographic location of higher education institutions.

To enhance the interactivity of distance learning teachers and College students use social networks.

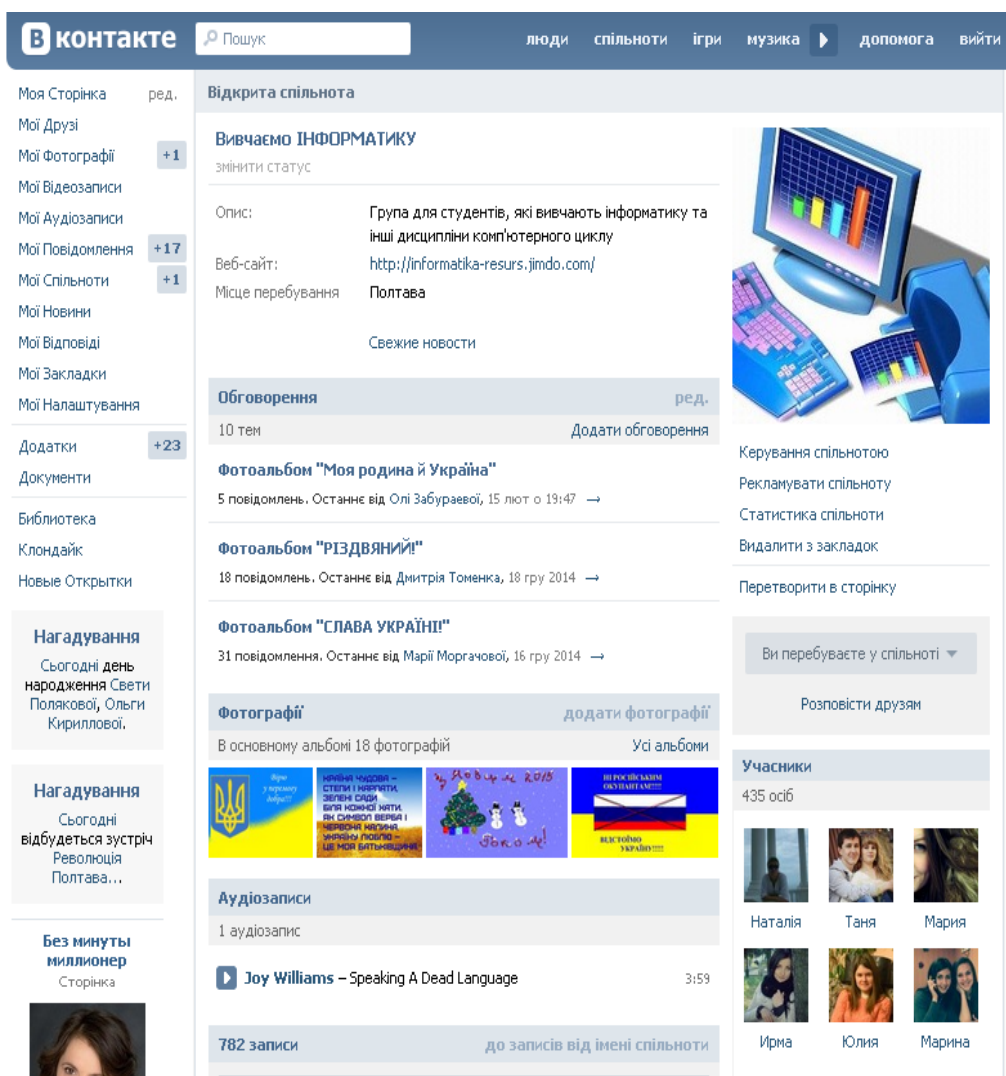


Figure 6.  
Studying computer science <http://vk.com/club51545903>



C. Woodleya, C. Meredith noted that the University of Victoria in Melbourne uses Facebook for student participation in distance education. They offer a General analysis of the use of Facebook as an interactive point of interaction, and encouraging its use in that capacity (Woodleya & Meredith, 2012). Study the opinions of students in agrarian colleges showed that Ukrainian students prefer the social network Vkontakte <https://vk.com> 96.1% of students surveyed indicate that most commonly used network Vkontakte. We took into account the opinion of students and created for educational purposes, special group Vkontakte.

Each group is designed to help in learning the discipline and organization of interactive communication:

Interactive group in social network Vkontakte, which are used in College:

- Higher mathematics with Natalia Kononets <http://vk.com/club82238087>,
- Studying computer science <http://vk.com/club51545903> (Figure: 6),
- Studied physics and astronomy <http://vk.com/club78817990>
- Economic Cybernetics <https://vk.com/club90350030>

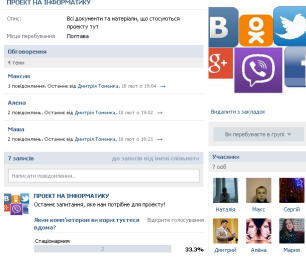
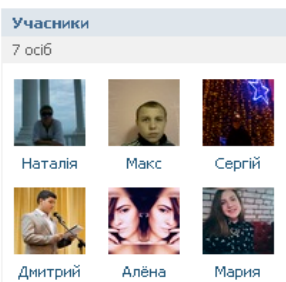



In distance learning are popular network projects - a kind of educational project, all the tasks which you perform on the Internet.

Actually, students benefit from comprehensive tasks that are performed with the help of Internet services and social networks and the web-portfolio project.


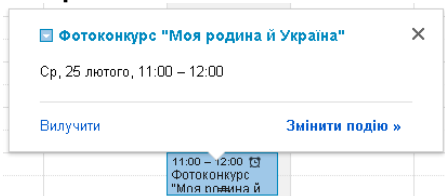

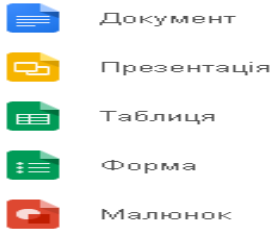

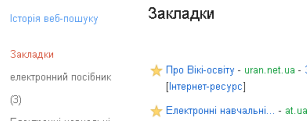

Here is an example of a web portfolio network project done by students in the Agrarian College of Management and Law of Poltava State Agrarian Academy for the study of Informatics.

Topics of network projects:

- Happy family.
- My Ukraine is a free country.
- My home town (village).
- Ukrainian traditions.
- Ukrainian cuisine.
- Ukrainian art.
- Ukraine is a country of wonders.
- All health.
- Ukrainian youth for healthy life.
- Long Live Ukraine.

Components of Web Portfolio	Task	Tools
<b>Group VKontakte</b> 	<b>Create a group "theme Name" to add the project participants and NataliaKononets</b> 	<a href="http://vk.com">http://vk.com</a> 
<b>Gmail account</b> <a href="https://sites.google.com">https://sites.google.com</a>	<ul style="list-style-type: none"> <li>- Register an account in Google</li> <li>- to create your email Inbox for Gmail address to post in the VK group)</li> </ul> <p>To create a website on a specific topic independently to design the number of pages to select the material for the site (texts, photos, files), and place on the pages.  Each project participant must find and place a message on the site, signing it with his name and putting in the resource where this message is taken (link).  Access to edit the website to provide all team members and Kononets N. V.  <a href="mailto:natalkapoltava7476@gmail.com">natalkapoltava7476@gmail.com</a></p>	<b>Account Google, Gmail mail</b> <b>Sites</b> 
<b>Group Vkontakte</b>	<p>To conduct on-line survey as part of the theme in the social network Vkontakte. <i>Define 1-2 questions. For example, under the topic "Ukrainian cuisine" you can ask a question:</i></p> <p><i>"What Ukrainian dish often cook in your family?"</i></p> <ul style="list-style-type: none"> <li>- Borscht</li> <li>- Dumplings</li> <li>- Cabbage rolls</li> <li>- Pancakes</li> </ul> <p>Link to the voting results to display on the page.</p>	<a href="http://vk.com">http://vk.com</a>
<b>Group Vkontakte</b> <a href="https://www.blogger.com/home">https://www.blogger.com/home</a>	<p>Create graffiti on a wall and place in a group project</p> <p>Create a blog under the theme (eg "Interesting recipes"), a link to a blog post on Google-site; invite students to post comments (items 10-15 )</p>	<a href="http://vk.com">http://vk.com</a> <b>Google blogger</b> 

	Create your own channel in Youtube, the video	Youtube
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<a href="https://www.youtube.com">https://www.youtube.com</a>	post. Link to the channel embed in your blog	 YouTube
<a href="https://www.google.com/calendar">https://www.google.com/calendar</a>	Create a calendar project and post it online on a separate page "Calendar project." Events can be painted as follows: <i>February 28 11.00-12.00 "Creating a Vkonkakte group " (Iryna Ivanova)</i> Examples of events: 	Calendar  Календар
<a href="https://drive.google.com">https://drive.google.com</a> 	Create means Google Drive documents: 1 text document; 1 presentation; 1 table; 1 form; 1 picture. Sharing editing give all group members.	Disc Google  Диск
<a href="https://www.google.com.ua/bookmarks">https://www.google.com.ua/bookmarks</a> 	Create bookmarks from the list used Internet resources: links to bookmarks place on the site.	Bookmarks Google  Закладки Отримуйте дост зірочкою
Group Vkontakte	Present project The project group VK post: Link to the website, Link to the blog, Links to bookmarks, Link to calendar, links to files Disc Google, Link to the Youtube channel, Online Survey VK. Show completed tasks.	<a href="http://vk.com">http://vk.com</a>

## WEB PORTFOLIO NETWORKING PROJECT

### CONCLUSIONS

For the effective implementation of distance learning as a form RBL disciplines of computer cycles in the agrarian College, it is advisable to outline the strategy:

- the creation of a well structured Bank of training materials (print and electronic), from which you can generate specific individual training program;

- the creation of an environment of the administration of training materials and development of individual programs (resources) distance learning;
- creating an environment of distance learning (distance learning courses and interactive groups in the social network), which is connected with the Bank of training materials, and supports individual learning format on individual programs;
- the creation of a social network, which ensures the development, update and administration of appropriate training resources and administration of the process of distance learning.

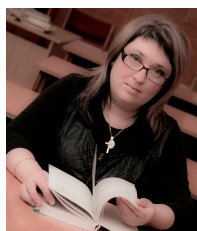
Distance Learning as a form RBL will solve the problem of improving the quality of teaching disciplines of computer cycles, optimization, intensification and individualization of learning of students in agrarian colleges, will contribute to the effective organization of working time of the student and instructor, and will also contribute to global integration into the world educational space.

On the other hand, the use of distance learning is a step to education throughout life, unlike the practice for a long period of study in the College separated from employment at a specific production, because of continuing professional education is a global trend, the main concept is to learn to acquire knowledge.

Perspectives of the study was to organize a full -fledged e-learning in each of the agrarian College of Ukraine, which will form a unique educational program by combining courses that are taught in the colleges; will improve the level of independence of students full-time education and correspondence courses, the level of information culture will allow us to teach more students. Distance Learning as a form RBL students will improve the quality of teaching disciplines of computer cycles that will undoubtedly raise the level of educational potential of society and the quality of education will satisfy the country's needs for highly-qualified specialists and skilled workers of the agricultural sector.

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## ILLUMINATING 'SECOND LIFE'S BENEFITS AND CHALLENGES AS AN INTERACTIVE BLENDED VIRTUAL LEARNING PLATFORM FOR ENGLISH LANGUAGE TEACHING AND LEARNING

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### ABSTRACT

The advancement and innovation on learning technology such as 3D virtual worlds offers new opportunities for teaching and learning languages. Learning English as a foreign language like many other foreign languages possess as a challenging task to teachers and students. Virtual World such as *Second Life* (SL) functions as a global platform potentially can become a powerful tool in learning and teaching of English as a foreign language due to its immersive and interactive environments. Its interactive interfaces provide students with realistic experiences and simulated everyday situation in 3D virtual worlds for more authentic and physical practice that would enhance students' awareness of the target culture, knowledge construction and learning.

This paper highlights the benefits and challenges associated with Second Life as an educational tool in EFL classroom. Specifically, this paper is intended to review Second Life potential in virtual learning and its affordances offerings to enhance EFL which produces the motivating factor towards a doctoral study on Second Life and its potential to offer a fun-engaging-inviting learning of the target language never envisioned or made possible in the conventional classrooms.

**Keywords:** Second Life; English as a foreign language (EFL); Information communication technology; virtual world; 3D;

### INTRODUCTION

Like many Middle Eastern countries, English language is a mandatory course taught as a foreign language in Iraq. The intention has always been to educate and improve the students' proficiency and competency in the language.

Nevertheless, similar to any other countries where English is not a native language, English language education in Iraq too comes with many various issues and challenges (Al Hosni, 2014).

Today, Information Communication Technology (ICT) and advancement in educational technology play an imperative role in facilitating and enhancing the effectiveness of language learning and teaching process (Montazeri & Hamidi, 2013).

Computer Assisted Language Learning (CALL) requires applying the principles of computer-assisted language learning to language learning context. It employs the advancement of technological software and programmes to improve learning experiences and outcome (Ifeoma, 2010). The literature has shown that there are many various researches on CALL that has been pursued and completed. Like many other subject matter, new research on CALL is a continuous effort.

The research focus has progressively changed from one aspect to another. The latest area of research interest has been on virtual learning and how such environment could enhance learning and teaching. Virtual learning offers the possibility for learners not just to collaborate and interact with other learners, but an opportunity and possibility to engage and interact with native speakers of English language even without having to travel thousands of miles to be in English language native land like the Great Britain, United States of America, New Zealand, Australia, and others (Hamidi, Montazeri, Razavi, & Aziznejed (2014).

The digital age, and the advancement of educational technology has continuously create and change the learning and teaching method and making what was impossible many years ago a possibility today.(Esteves, Fonseca, Morgado, & Martins, 2011).

Virtual reality is a combination of Virtual World and reality to create a simulated dynamic process which allows multiple users to learn and interact with each other in computer-simulated environment. There are various technology that offers virtual learning.

This paper focuses on *Second Life (SL)*. It is the most common multiuser virtual platform that has been used for learning. Since Linden Lab released "Campus: Second Life" in 2003, many educational institutions and universities have built or prescribe their own virtual land in Second Life to provide students opportunity to practice and improve their language skills such as the Harvard, Princeton, Drexel, Ball State, Stanford, Ohio, and Bowling Green State due to its capabilities for communication and interaction as well as its affordance of immersive simulation(Schiller, 2009;HismanogluI, 2012).

The incorporation of virtual reality technology with *Second Life* into language learning curriculum does not only offer real-life audiovisual simulations, but also integrates both the virtual and real-life learning environments to promote interaction and learning engagement. The symbiotic relationship encourages learning, and makes English language teaching and learning much more inviting, exciting and promises more success (Chung, 2012).

The virtual leaning environment provides learners with a sense of being there, a new avenue towards successful learning of the target language.



It offers more opportunity to learn the target language with native like inputs; provide a much secure environment to engage and practice the target language without having to worry making mistakes, or being laughed at, and others factors that may prohibit participation. It is due to such prospect that this paper focuses on Second Life, and is intended to describe its enormous prospect, benefits, and challenges in the teaching and learning of English language as a foreign language (EFL) classroom. With such an enormous opportunity, this paper also suggests the importance of future research on Second Life as such advancement in technology could provide a game changer on how English language could be taught and learned in the future.

## **UNDERSTANDING VIRTUAL WORLDS**

Virtual Worlds (VWs) is not a new concept of now words. It was introduced and has come in different forms since 1980s. Nevertheless, until today, there is no single and consistent definition for Virtual Worlds that everyone accepts.

Virtual world can be defined as a computer based online simulated environment in which users (avatars) can shift and interact with each other by tools of integrated voice chat, text chat, group chat and other way of communication (Dickey, 2005).

Duncan, Miller and Jiang (2012) defined virtual world to include any online virtual environment that allow users to learn, player interact with others. In addition, Bell (2008, p.2) inserted that virtual world as "synchronous, persisted network of people, represented as avatars, facilitated by network computers".

Achieving common objectives such as making teaching and learning more interactive, engaging, collaborative is never an easy task to complete. Such attainment has always been set as educational goals and objectives of educational providers in the past, and still is in our presence time.

One particular technology that provides unique learning and teaching opportunities is the *3D Virtual World* which offers common space for users to interact and create an environment that support more meaningful learning (Eschenbrenner, Nah, & Siau, 2008).

The term Virtual World offers a new learning and teaching potential, but one with much ambiguity as evident in the literature. Grant & Huang (2010) for example described Virtual World as an umbrella term that can refer to over 250 Virtual World platforms such as *Croquet*, *Second Life*, *Exit Reality*, *Active World*, *Quest Atlantis*, *World of Warcraft*, etc. Indeed, each platform has their own affordances and limitation based on the platforms offerings and limitations.

In addition to the ambiguity issues, Virtual World is also often referred to other words that are thought to be synonymous to VW. These include: *Massively Multiplayer Online Role-Playing Games (MMORPG)*, and *MUVE (Multi-User Virtual Environment)*. Similar to Second Life, all of these terms have an online presence and could be used for learning, teaching playing, or socializing.

## **VIRTUAL WORLD IN TODAY'S EDUCATIONAL LANDSCAPE & ENVIRONMENT**

The use of Virtual World has received much attention and is increasingly favored as a powerful tool, and alternative to conventional ways of teaching and learning in education. Virtual World for example provides greater opportunity for open distance learning programs offering access to real-time communication and collaboration (Haycock, & Kemp, 2008; Mabrito, 2012). Learner interaction in 3D virtual environment is much more dynamic; the users have a representation or embodiment through the use of avatars.

The avatars are the users' representations which see the possibilities of communicating, showing real emotions, and still be control as if the users are in real time (Fowler, 2014). In addition, users (teachers, tutors and students can also immerse in an environment which is created by other avatars for the purpose of reproducing an original location (Gaukrodger & Atkins, 2013).

In that sense, (Dickey, 2005) maintained that VWs provide sites which creates an interactive learning environment that is current trend being reinforced by the increasing transfer to constructivism which is based the idea that knowledge is constructed by learners through negotiation and collaboration (Vygotsky, 1978). Therefore, VW can support constructivist learning due to avatars are able to interact and collaborate with one another within environment.

In this regards, some studies have offered the functionalities, general characteristics of virtual worlds and their potential benefits for learning and teaching.

To date, there are many benefits. These include:

- they are synchronous,
- they are facilitated by networked computers,
- they offer navigational space,
- they provide communication facilities,
- they support multimedia presentation and playback,
- they provide the creation and manipulation of avatars,
- they are persistent, immersive and highly-interactive (Kallonis & Sampson, 2010). Due to such possibilities Jung & Pawlowski, (2014) reported that there have been more than 1.4 billion registered users in 2011, and that such statistics only grow with time.

Consequently, there have been various 3D virtual world environments that have been adopted and used in today's education sector. For instance, SL launched in 2003, is the most common Multi-User Virtual World platform used in education. SL is fundamentally different from game or gaming products.

There is no specific task to complete and the aim is not to compete with other players, instead, it is a digital world created by its users. It allows users to meet other users from around the world in an established online environment (Schiller, 2009; Mabrito, 2012).

Within educational environments, SL has the potential to offer opportunities for educational institutions to construct teaching and learning classes, training programs, discussions, forums, etc.

### **DEFINING SECOND LIFE (SL)**

Many people have called Second Life (SL) a game; others call it a social networking platform, a venue and alternative. SL is defined as asynchronous online three-dimensional virtual world (also referred to as a Multi-Users Virtual Environment or MUVE).

It is been developed by a San Francisco based Linden Lab, and was launched in 2003 and made available on the Internet. SL entice users with the following statements "Enter a world with infinite possibilities and live a life without boundaries, guided only by your imagination" Linden Research, Inc., 2012 (as cited in Reinsmith-Jones, Kibbe, Crayton, Campbell, 2015, p.92).

Linden Lab has generated Second Life platform filled with objects, adventures and experiences of the individuals using Second Life. People enter SL for various purposes including, but not limited to meeting other people, working, educating and being educated and having fun along the way (Hundsberger, 2009; Schiller, 2009).

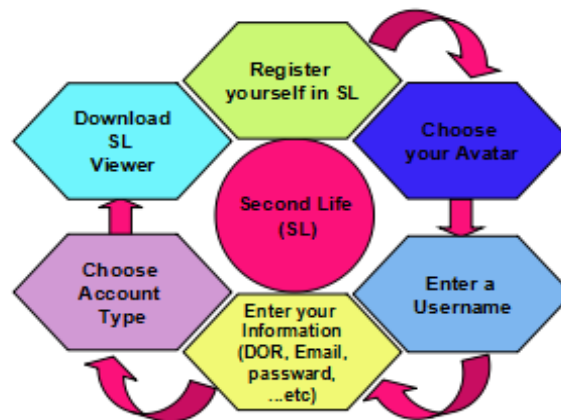
The fundamental underlying the SL invention is to create users or "residents" through their own representatives - avatars. The avatars, much like in the real world, can do anything from buying their own land, building their houses, rent properties, working, dancing, attending university, get married, and do various other activities on different islands. Evidently, SL is a digital presence consists of multitude of islands which can break up, to be sold and purchase by avatars. The currency in SL is Linden \$, which has an exchange rated of 1 US\$ (equal approx.: 260 L\$). Thus, the environment within Second Life is an imitation of the real life (Cheng, Zhan, & Tsai, 2010; Storey& Wolf, 2010).

In addition to the above, the avatars can communicate with other users through traditional text chat, or the use of the more recent incorporation of voice chat (Carter & Elseth, 2009; Keskitalo, Pyykko, & Ruokamo, 2011).

SL also has the abilities to record actions that occur within SL. As a result, learners or users have the opportunity to assess and reflect their personal performance and interactions with others by viewing their own recorded video clips in SL (Wang, Song, Xia, & Yan (2009). Such potential is meaningful in teaching and learning as it provides all stakeholders in education (particularly teachers, instructors and researchers) to reflect and formulate improvement on the learners' proficiency both from the linguistic and social communication perspective.

SL offers a friendly and easy to register to its users as depicted in Diagram 1 below. The first step is to register by logging into the official website [www.secondlife.com](http://www.secondlife.com).

All users are required to give their personal information including their first and last name, address, email, and gender. Then they will be asked to choose an avatar, which represent them in the virtual world in SL. Generally, there are two types of account to register. Namely one is Free and another is called Premium with a required nominal fee. User has to pay registration fee in Linden dollars if the user wants to be Premium member. Premium account allows users to purchase a land where they can build their buildings and conduct activities. However, free account allows users to create objects but will not be permanent.



**Diagram 1:**  
**Second Life Registration**

When users become SL members, they can purchase a land where they would be allowed to conduct various virtual activities. Both types of account are fun to enroll and offer various teaching and learning opportunities on tops of other benefits that SL provides.

With its friendly and interactive interface, SL offers users to be creative and innovate ideas. For example it allows students to create a persona (animals, human or something between) and interact with others, who are in the same environment at the same time, and change their appearance. These may include dressing, clothing, hair color, shoes, etc. (Inman, Wright, & Hartman, 2010; Oaks, 2011).

Additionally, power points presentations can also be uploaded into SL and attached to certain objects. Note cards that may contain information that a teacher desires can be attached to any object in Second Life and recaptured with just a click of the mouse. Additionally, words or phrases can be attached to objects as floating script, so the students would not even need to click on an object to get a written version of its corresponding words (Carter & Elseth, 2009). Therefore, if SL is used and adopt into the English language education, it provides endless opportunities for a much interactive, engaging and fun learning.

SL helps learners to explore the lessons that they have learned, particularly offering them much more practice opportunities situations compared to the limited and inflexible traditional classroom.

As a result, SL is currently being used by many educational institutions as a way to engage students in immersive educational environments. This crucial method of teaching in SL is a combination of theory and practice together with distinctiveness of environment (Carter & Elseth, 2009; Hundsberger, 2009).

The interaction and interactivity within the activities in the SL virtual environment platform allows EFL learners to use English language through personified virtual characters. It is learning but in a fun way. Hence, SL encourages learning willingness and enhances interactive learning (Chung, 2012). Second Life is a useful tool for language learners. It provides them with a unique opportunity to use the target language skills with other learners and potentially with native speakers of the English language. Such opportunity allows the learners to communicate with native speakers to practice their oral skills and improve their pronunciation. It also provides some cultural awareness (Wang et al., 2009). Such opportunity over time would improve learners' confidence and ability.

## **SECOND LIFE AFFORDANCE IN EDUCATION**

One of the essential goals of education is to help students build their skills in both their preferred and less preferred learning opportunities (Idrus, 2008). Thus, the most successful way to learn second or foreign language is to participate in a community in which the target language is used to communicate in a real environment (Ibanez et al., 2011). The communication with other learners or native speakers of the target language has been recognized as an essential part of the learning process (Ellis, 1999). The advantage of conversation in authentic situations is invaluable to language learners (Krashen, 2003). In contrast, within a traditional EFL classroom environment, such opportunity or chances is not available. SL offers a platform where learners can meet and engage with authentic dialogue in a simulated environment, giving individuals a sense of 'being there' (Gaukrodger & Atkins, 2013).

Moreover, Second Life can be utilized to make learning more meaningful, interesting and attractive with the purpose to improve the mastery of the target language. This is attainable due to its immersive and interactive environment. According to Storey & Wolf, (2010) and Hismanoglu (2012) Second Life is a unique learning tool for EFL learners. It gives them unique opportunity to practice language with native speakers and non-native speakers of English for all over the world. Therefore, with endless potential, SL is particularly appropriate for teaching and learning foreign languages. Students can immerse themselves in linguistically appropriate environment, and be interactive with animated features (Mabrito, 2012; Abdelaziz, Riad, & Senousy, 2014).

Literature has proven that creating social and authentic interactions could enhance language production, promote communication and assist foreign language learning.

Therefore, constructivist approach identifies that knowledge is built by students rather than conveyed and that argumentation encourages negotiation and collaboration among learners (Vygotsky, 1978). In other words, a constructivism theory proposes the idea that learning occurs through interaction in the learning environment. Therefore, meaningful knowledge is constructed through the physical interaction with the real world (Mcdonough, 2001).

In this regards, 3D virtual world environment for teaching and learning such as Second Life can support constructivist learning because it allows users to be physically there in the virtual environment where learners can construct their linguistic and cultural knowledge through authentic interaction with native speakers (Cheng et al., 2010).

SL offers new ways to support learning in virtual contexts. Its unique attribute enable schools and universities to achieve targeted educational goals, which otherwise would not have been achievable in the physical world (Zhang, 2013). In this regards, USA today reported that more than 300 universities around the world and a large number of colleges, and in some cases individual departments have employed SL as an educational tool for open distance education courses, and some use by teachers to support existing traditional classes (Henderson, Huang, Grant, Henderson, 2009; Hismanoglu, 2012).

As advancement of technology continues to change education and the processes, we will see more improvement to various educational tools including SL. To date, there has been various empirical works looking at the effectiveness of teaching foreign languages using Second Life. Hislope (2008) reported the perceived benefits and drawbacks in using Second Life as a virtual reality program in her intermediate Spanish course in 2008 to a classroom supplement to promote contact and conversation with native Spanish speakers. Results of a survey with 20 open-ended questions administered to 15 students showed both positive and negative experiences with learning Spanish in Second Life. Students like interactive, creative, and gaming -like aspects of Second Life. The reported negative experiences with Second Life focused heavily on technical issues and the high learning curve of navigating the Second Life. Regardless of challenges, 13 of 15 students reported that Second Life could help them improve their comprehension of Spanish.

In another study, Wang et al. (2009) explored an international corporative study between a Chinese university and an American university to investigate students' technology readiness and their perception of using Second Life as a language learning platform.

This study also focused on students' perceptions on integrating Second Life into teaching English as a foreign Language program. Sixty one EFL learners in China meet weekly within the American partners to complete the assigned learning tasks. Evidently, this research showed that EFL learners positively perceived Second Life as a language learning tool, and they understand the EFL program in Second Life offers much promising successful learning experience. It offered them fun productive learning that would not be easily achieved in real life.

## **BENEFITS OF SECOND LIFE TO ENGLISH AS A FOREIGN LANGUAGE TEACHING AND LEARNING**

Virtual Worlds like Second Life are particularly well suited for teaching and learning foreign language as it allows learners to immerse themselves into linguistically appropriate environments. It also allows them to communicate with each other to achieve the educational objectives and experience in ways that will not be possible within the conventional EFL classrooms (Cheng et al., 2010). Over times, Second Life has now gained popularity and is found to benefit various foreign language education including the teaching and learning of the English language as a foreign language.

Warburton (2009) and Hismanoglu (2012) inserted that SL offers various benefits to the teaching and learning of English to EFL learners. These include:

- **Rich interactions:** Second Life has potential to provide opportunities for social interaction among people and their communities, human-object communication and also intelligent interaction among artifacts.
- **Contextualization and visualization:** It provides learners and users with playing opportunities, and production and reproduction content which may be impossible to realize and duplicate in the real world.
- **It provides learners to recognize and learn about other cultures.**
- **It makes immersion in 3D virtual World where learners having strong expression of being presence through avatars.**
- **Simulation:** It provides reproduction of context, sometimes hard to produce in the real life.

Many studies have conducted extensive research on anxiety and motivation and their correlation with linguistic performance of learners, emphasizing the role of anxiety and motivation as determinant factors in foreign language learning (Toth, 2011; Thayne & Dana, 2013).

The higher motivation and lower anxiety levels students will be more successful in their learning of a new language. Environment plays a crucial role for improving learner motivation and help learners decrease their anxiety levels to a minimum (Liu & Cheney, 2014). In real world, Asian students have suffered from performance anxiety.

Socially, it is not adequate or 'acceptable' for them to make mistakes and they do not like to embarrass themselves in community. As a result, they are shy and do not like to speak up.

SL offers a plausible solution to performance anxiety. In actuality, as proven by various research iterated earlier suggest that the performance anxiety is significantly reduce in Second Life. One of the most prominent features of SL is that users can remain anonymous (Hansberger, 2009).

This is beneficial to some students especially to those EFL learners who suffer from performance anxiety in real life.

In addition, Inman et al. (2010) pointed out that researchers and educators are choosing SL because they believe that SL provides a high degree of realism with minimal risk and offers a great venue for informal learning situations. Given that SL could persist to be part of the educational argument in order to help instructor in deciding how to utilize SL as an educational tool.

## **SECOND LIFE AND ITS CHALLENGES IN EFL**

The use of Second Life for creating language learning environments holds great benefits. Nevertheless, it also has its limitations and challenges. Baker, Wentz, & Woods (2009) pointed out plausible issues or challenges:

- The need for high end technology: Second Life involves more than a simple computer. Requirements of complete system are listed on SL web site. The computer of many educational institutes might not be able to meet the system requirements. Therefore, SL platform involves specific advance graphic cards and high speed broadband connection.
- Some students might also have anxiety about learning to use SL. Some students may not enjoy online interaction or comfortable working online, while others are willing to try new technologies.
- Overlapping conversations can happen simultaneously which can become confusing among learners. In this case, teachers must formulate procedures for dealing with group discussion in SL.
- Difficult operation tasks. Some students are able to create an avatar, download the software, and learn most basic operation within an hour; nevertheless, this process will not be easy for some.
- Finally, security matter should be taking into account. Learners want to be informed about appropriate behavior and safeguarding their privacy while communicate in SL.

## **CONCLUSION**

Teaching and learning English is always a challenging task. Every country, culture and community of learners may present their own unique issues and challenges to English language education.

It is a field that will see continues research in search of new pedagogies, strategies, techniques, software, games, etc., to a successful mastery of the target language. This paper shares a literature review on SL and its potential in EFL, and consequently has motivated a PhD study pioneered integrating Second Life into EFL education.

The study focuses on Second Life in learning and teaching English as a foreign language which may offer various advantages and benefits to learners and teachers.

Nevertheless, learners are predictable to progress and participate in interactive and engaging educational activities that improve learning process. Second Life is a unique opportunity for learners.



It allows learners to interact with native speakers and other learners through avatars in the environment and can produce new experiences that may difficult to present in the real life classrooms.

It can foster synchronous interaction with teacher, students and other learners. It can also foster competency based training like vocabulary, skill, and grammar such other computer assisted language learning devices.

SL provides an effective learning environment for EFL learners beyond traditional learning environment. Teachers of English language can utilize SL in their teaching as a part of a supplement tool to a traditional face-to-face learning. Activities occur in virtual learning environments will help students negotiate meaning, develop their language skills, and realize the way in which language is used. Finally, SL contributes to creating virtual environment in which EFL learners could be learning through interaction and collaboration.

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## **TRAINING NEED ASSESSMENT OF ADMINISTRATIVE STAFF OF ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD**

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### **ABSTRACT**

Needs assessment and Human Resource Development are closely lined with each other considering this; the study was undertaken with the objectives of the study: to identify the human resource development needs of administrative staff, analyze training needs of administrative staff, and suggest solutions of the problem for administrative staff and developing a training model for administrative staff. For this purpose a questionnaire was designed on Likert Scale for collection of data. The population of the study consisted on whole administrative staff at AIOU, Main Campus, Islamabad and Regional Campuses/Centers/Offices. The study was descriptive in nature, for the purpose of data collection the questionnaire was delivered personally to the respondents at AIOU, Main Campus, Islamabad and through mail and email to other Regional Campuses/Centers/ Offices. The data was presented in table forms and mean percentages and mean score was calculated.

**A finding of the study includes training required:**

- **Designing Filing System,**
- **Defining Procedure for Record Retention,**
- **Computer Advance Level Training,**
- **Personnel Management**
- **Using Utilities Software Programs for Administrative Task Completion**
- **Efficiency and Disciplinary Rules,**

- Working with Noisy Equipment,
- Noting and Drafting Procedures and Techniques
- Safety,
- General Financial Rules,
- Performance Evaluation and Quantification of ACRs,
- Legal and Legislative Drafting , (xiii) Supervision,
- Communication and Convincing with Logical Reasoning,
- Maintaining Staff Encouraging Environment and Motivation
- Framing Office Procedures,
- Believe on create good and healthy working environment and
- Planning and Implementing Office System, layout etc.

Under conclusion, it includes that staff need training in Rules and Regulation, communication skills and analytical skill, self-motivation and improving social behavior.

It was recommended that the administrative staff need training to enhance their working capacity and professional skills for smooth functioning of the office. On the basis of finding, the administrative staff should be provide on the job or off the job training opportunities and the University should design courses/programs related to areas highlighted in the finding and launch training programs periodically.

**Keyword:** AIOU, training, need assessment, administration staff, distance education, University.

## INTRODUCTION

### Training Need Assessment

Training Need Assessment is based on organization, operation and individual analysis. In organization analysis, training needs are identified within the organization.

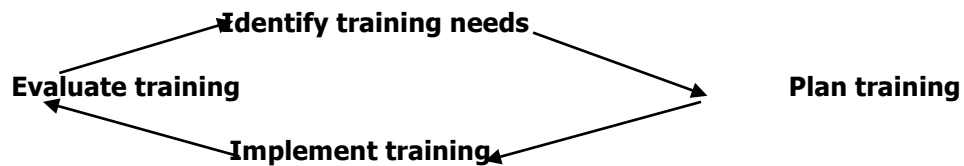
At operation level training needs assessment is made on operational basis like what an employee must do in order to perform competently and individual analysis helps in determine how well each employee is performing the tasks that make up his or her job.

Presently training and development is a center stage almost in all organizations. Training is a planned and organized programs designed to improve performance of individual or group at organizational level to achieve time bounded objectives efficiently and successfully.

The objectives of training are measurable changes in knowledge, skill, attitudes and social behavior.

Training and Development is functions of management related to Human Resource Management (HRM) which deals with functional division of personnel employed. To identify training and development needs and planning, designing, organizing and implementing is called 'The Classic Training Cycle' which is as under:

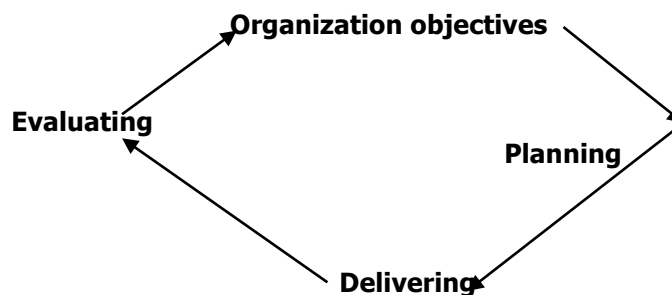




**Figure No.1**  
**Classic Training Cycle**

Source: Wilson, P.J. (2005). *Human Resource Development Learning and Training for Individuals and Organizations* (2<sup>nd</sup> edition.). India: Kagan Page Limited.

Assessment of training needs in an organization is based on objectives to be achieved. Likewise, training and development of operational skills of personnel required to ascertain goals. For this purpose, a training cycle adapted by winter, (1995) is as follows:



**Figure No .2**  
**A Training Cycle adapted by Winter (1995).**

Source: Winter, R (1995) *Strategic Human Resource Development*, Harlow, Pearson Education: *Training and Development*. Oxford: Blackwell.

Need represent the gap between what is what would or should in a particular context and need assessment is a parameter to determine this gape and to suggest remedial measure to bridging this gape. Hay Group (2004) defined training needs assessment is a process of gathering information regarding potential of the participants and development of training courses and to chalk out the method of delivery of training program. Further training needs assessment helps in determining training needs, priorities of training and achieving training objectives.

The World Bank Institute Implementing Agency (n.d) elaborated that a training needs assessment or training need analysis is a method to determine the gape between existing and required training needs and how to fill up this gap.

The different levels of expertise, knowledge, skills are required for different jobs, so training needs are also different for each level thus training needs varies for each target group.

World Health Organization (2000) defined needs assessment is a tool of program planning which evaluate the capacity of services and appropriate mix of services required to responds diversity of need associated with the goal of an organization. Miller, (2002) defined training needs assessment is an activity to be carried out training and development function and designing and developing training and development program consists of different phases i.e. needs assessment, instructional objective, design and implementation and evaluation of training programs. Wasserheit (n.d) defined that the training needs assessment is a systematic process of assessing skills at expertise level of workforce who have been assigned different tasks and to need to address the deficiencies if exist through staff development methods. According to Annual Report Year 2006-2007 of National Rural Support Program (NRSP) Institute of Rural Management, training needs assessment is a cyclical process to be repeated on regular basis to assess change in needs of an individual as well as organization. PRSP followed the following process of training needs assessment.

- Target Population Selection
- Development of strategy for training needs assessment considering objectives and components
- Identification of source of information/ data
- Selection of methodology

Sammers (2002) elaborated need assessment is a process to identify types of training programs for the purpose of technical and vocational training which can address the needs with the understanding of role of technical and vocational training in the economy and educational system of the country.

The purpose of Training Needs Assessment Survey (TNAS) is to facilitate an organization to evaluate current requirement of staff training about identification of problem area, analysis of problem and to dig out remedial measures as well as to evaluate performance of the personnel who have got training.

### **Training Programs**

In general term, training process strengthen three human dimension i.e. knowledge, skills and aptitude. These aspects need to be taken together and addressed for the development of human resources who can contribute effectively in socio economic development of the country. Gulzar (2009) defined training is a learning process and acquisition of knowledge, strengthen professional skills, development of new skills, behavioral change, enhancement of productivity and performance level of an employee.

Training and development programs based on the first step/ phase i.e. training needs assessment i.e. Systematic inquiry for the purposes of identifying priorities and making decisions, and allocating financial resources in a manner consistent with identified program goals and objectives. Training needs assessment is usually concerned with individual and organization performance.

As far concerned with individual, needs assessment highlight that job performance level and in relation to organization it defines organizational objective.

After getting requisite information from employees through tool, an organization identifies problem areas and prioritizes training programs. Prior to implementation programs which have been chalked out, organization determine financial implications, trainers, space, facilities, equipments and time which will support training programs.

Technological advancement and changes in every field of life throughout the world is very rapid. New equipment, machines, products are being introduced day by day which requires that user should be fully acquainted. In order to meet technological advancement requirements, an organization need to develop training strategy for human capital to trained them.

Every organization wish to have well adjusted trained and experience personnel to perform the job assignments efficiently. With the passage of time, importance of education and training has been increased because in past jobs were not so complex and complicated and there were little need of employees to upgrade their education and ulterior skills. In the current era rapid changes are occurring and requiring skilled and updated knowledge of employees. This situation demanded that orientation and proper training of the employees is an essential part of Human Resource Management.

To cope with this, an emerging demand, created a separate field of study i.e. Human Resource Development. Training is a learning processes through experiences in which seeks permanent change in an individual which enhance the working capacity as well ability to perform the tasks quickly and efficiently. According to Robbins (n.d) Training is a learning experience in that it seeks a relatively permanent change in an individual that will improve the ability to perform on the job. Training can involve the changing of skills, knowledge, attitudes, or behavior. Cascio (1998) defined training as:-

- Training consists of planned programs designed to improve performance at the individual, group and/or organizational levels. Improved performance, in turn, implies that there have been measurable changes in knowledge, skill attitudes and/or social behavior.

**Manpower Services Commission (1981) Glossary of Training Terms defined training as:**

- A planned process to modify attitude, knowledge or skill behavior through learning experience to achieve effective performance in an activity or range of activities. Its purpose, in the work situation, is to develop the abilities of the individual and to satisfy the current and future needs of the organization.

### **Job Specification**

Job specification is output of job analysis. Job analysis provides basis of developing job specification. Job specification is a written statement of qualifications that one must possess to be inducted to perform specific job. Job specification defined by Robbins (n.d) as, "Job specification is narrates an acceptable minimum qualification that an incumbent must posses to do the job successfully.

**Job specification is a statement of the human qualification required performing the specific job” (<http://www.dbms.edu.pk/file>).**

### **Job Description**

**Job description is an account of activities and duties linked with a particular job and it is prepared to identify, define limits and description of contents of the job.**

**The term job description used to illustrate characteristics of job to be met out. Job description is defined by Human Resource Experts in large organization whereas in small enterprises, supervisors execute this task.**

**Job description is a written statement that defines, relationships and result expected of anyone in the job. It is an overall view of what is to be done in the job [http://www.magma.ca-tskdim/obyep/jobseach/job\\_description\\_and\\_specification. tm](http://www.magma.ca-tskdim/obyep/jobseach/job_description_and_specification.tm)**

**Job description is written statement that identifies the tasks, duties, activities, and performance results required in a particular job. Job description defined by Decenzo (2000). Is as, “A written statement which covers the detail of job is to be done by the holder with certain condition and why it is done is known as job description”.**

### **Job Analysis**

**Management prior to human resource planning considers defining what work is to be done and how it can be divided in to different jobs. This process is known as job design and collecting relevant information and data is called job analysis. Gatewood & Field (1994) defined job analysis is systematic and purposeful process to gather information on work related aspects of a job. Leslie & Bayers (2000) defined “job analysis is a process of determining specific job by gathering information related to job through observation and studies”.**

**According to Cascio (1998), “job analysis comprises job specification and people requirement that should reflected minimally acceptable qualification for job holders”. As per view of Decenzo (2000), “job analysis provides information about job current being done and the knowledge, skills, and abilities individuals need to perform the jobs adequately”.**

**Job analysis is an assessment that defines jobs and the behavior necessary to perform them. Robbins (n.d) defined job analysis is an activity which provides entrusted data to evaluate performance of personnel because supervisors are enable to compare actual work executed by an individual with the tasks required to be accomplished.**

**On these lines, job analysis also basis of training need assessment and chalk out training programs. To collect data for job analysis following four techniques are used.**

- **Interviews**
- **Observation**
- **Questionnaires**
- **Use of Diaries and Logs**

**Job specification specifies the characteristics required to perform job defined in the job description. Job specification is concerned with an individual who has to perform the job rather on the work itself.**

#### **Job Enrichment**

**Job enrichment is an activity to design jobs which facilitate the incumbents to satisfy needs for recognition, growth and responsibilities. In this way employees are given responsibility and job are expanded vertically.**

**Decenzo (2000) elaborated that job enrichment refers to the vertical expansion of jobs. It increases the degree of which the worker controls of planning exaction, and evaluation of the work.**

**According to Leslie & Bayers (2000) job enrichment involves an upgrading of the job by adding motivators factors, designing jobs that provides for meaningful work, achievement, recognition, responsibility, advancement, and growth is the key to job enrichment.**

#### **TRAINING NEEDS OF ADMINISTRATIVE STAFF of ALLAMA IQBAL OPEN UNIVERSITY**

**The purpose of a training needs assessment, it is an activity to identify performance requirements or needs within an organization in order to deploy resources to the areas of greatest need, those that closely relate to fulfilling the organizational goals and objectives, improving productivity and providing quality products and services.**

**The needs assessment is the first step in the establishment of a training and development program. It is used as the foundation for determining instructional objectives, the selection and design of instructional programs, the implementation of the programs and the evaluation of the training provided.**

**These processes form a continuous cycle which always begins with a needs assessment. Training needs assessment taken place at three different levels which are organizational analysis, task analysis and individual analysis and these levels are integrated with each other.**

#### **TRAINING FACILITIES TO ADMINISTRATIVE AT ALLAMA IQBAL OPEN UNIVERSITY**

**Staff Development and Nominations Section is functioning in the University which is headed by Assistant Registrar Staff Development and Nominations under the supervision of the Registrar.**

**The University first time created budget provision for Staff Development programs from Endowment Fund and payments were paid to the Academic Staff for foreign higher studies.**

**The detail is presented in table 1.**

**Table 1.**  
**Year wise Budget Allocation for Staff Development of AIOU**

<b>S.No.</b>	<b>Financial Year</b>	<b>Budget Allocation (Rs. Millions)</b>	<b>Actual Expenditures (Rs. Millions)</b>
01	1999-2000	5.000	2.145
02	2000-2001	5.000	4.633
03	2001-2002	4.000	0.061
04	2002-2003	-----	-----
05	2003-2004	4.000	2.835
06	2004-2005	-----	----
07	2005-2006	----	----
08	2006-2007	1.000	* (-) 0.144
09	2007-2008	3.500	0.720
10	2008-2009	3.000	0.298
11	2009-2010		
12	2010-2011		
13	2011-2012		
14	2012-2013		
15	2013-2014		
		<b>Total</b>	<b>10.692</b>

\*(loan installments recovered from employees on account of Purchase of Personal Computers and adjusted in budget allocation)

As far concerned further development regarding introducing Staff Development Programs in AIOU is concerned, as per Academic Audit of AIOU, 2006, Quality Enhancement Cell (QEC) and Academic Planning and Course Production (AP&CP) was proposed, as there was need to train and equip academicians with characteristics of Open Distance Learning (ODL) system. Director of QEC presented the detailed course outlines of "In Service Training of AIOU Staff", a non credit course of two months duration.

The following is the committee of this course.

1.	Prof. Dr. Muhammad Daud Awan	Chairman
2.	Prof. Dr. M. Zafar Iqbal, Member MAC/Dean F/O Edu	Member
3.	Prof. Dr. Muhammad Kaleem Tahir MAC/Dean F/O Science	Member
4.	Prof. Dr. Inam ul Haq Javed MAC/Dean F/o SS & H	Member
5.	Prof. Dr. M. Baqir Khan Khakwani MAC/Dean F/O A&IS	Member
6.	Dr. Mehmood Hussain Awan, Chairman Special Education	Member
7.	Mr. Abid Hussain Khawaja Member MAC/Director IET	Member

In this regard one workshop of seven days have been conducted from 19-2-2009 to 24-2-2009

## **STAFF TRAINING PROGRAMS of AIOU**

First time from the inception of the University, the Vice-Chancellor emphasized training need of the staff.

The views are as, "In a distance learning institution particularly there must be also be ample provision for the training of servicing and administrative departments, whose effective operation is essential to the function of the University as whole" (Five Year Report 1974-1979, p. 5). Further the Vice-Chancellor chalked out priorities regarding training programs. First priority was given for presentation of course program inevitably, very productively, the training has been "on Job" for the both academic and servicing side (Allama Iqbal Open University Five Year Report 1974-1979 Islamabad 1979, Chapter VII Staff Development, p.95).

There is no budget provision for staff development of administrative staff under Staff Development Program. Staff Development budget is being spent on Academic Staff Development programs.

In the year 2000-2001, the Vice-Chancellor took step to provide Computer Skills to its employees and the Chairman Department of Computer Science was assigned this job. The Department of Computer Science arranged computer training for all categories of AIOU staff. According to statistics available in Vice-Chancellor Report year 1997-2000, total administrative staff that availed training opportunity is 18. After that no such arrangement has been made so far.

To acquaint its employee with professional skills, the University is also making nominations for training to other government institution like Pakistan Computer Bureau, Islamabad (PCB) and Secretariat Training Institute, Islamabad (STI) who invites nominations from the University for training of their employees. The detail of employee who got training from 1975 to 2008 is as under:

**Table 2.**  
**Detail of Staff Provided Training Year Wise**

<b>Year</b>	<b>Within AIOU</b>	<b>Within Country</b>	<b>Abroad</b>	<b>Total</b>
<b>1975-1985-</b>	-	-	<b>17</b>	<b>17</b>
<b>1985-1989-</b>	-	-	<b>3</b>	<b>3</b>
<b>1989-1993-</b>	-	-	<b>14</b>	<b>14</b>
<b>1993-1997-</b>	-	-	-	-
<b>1997-2001-</b>	<b>18</b>	<b>23</b>	<b>4</b>	<b>45</b>
<b>2001-2002-</b>	-	<b>13</b>	-	<b>13</b>
<b>2002-2004-</b>	-	<b>4</b>	<b>1</b>	<b>5</b>
<b>2004-2005-</b>	-	-	<b>2</b>	<b>2</b>
<b>2005-2007-</b>	-	-	-	<b>45*</b>
<b>2007-2008</b>	-	-	-	-

## **OBJECTIVES OF THE STUDY**

Objectives of the study were:

- To identify the human resource development needs of administrative staff to analyze training needs of administrative staff under study.
- To suggest solutions of the problem for administrative staff included in the study.
- To develop training model of human resource development for administrative staff.

## **RESEARCH METHODOLOGY**

This study was descriptive in nature. Method and procedures used in this study are presented under the following sub-heading instrumentation, research sample, data collection, analysis and interpretation.

### **Population of the Study**

Population is a group of persons or individual having common one or more characteristics for the research. Bukhari (1990) defined a population or a universe or an aggregate is any group of individuals that has one or more characteristics in common that are of interest to the research. Further Koul (2007) defined the population is a collection of specified group either it is human being or non-human entities like educational institutions, time unit, geographical areas, prices, commodities and salaries are called its universe.

In this context, population may consist of students in a class, manufacturing firm, universities, employees in the university, academic staff, teachers in school etc. There are two types of population i.e. homogenous population and heterogeneous population. The population of this study consists of administrative staff (Basic Pay Scale BPS 16 and 17) at AIOU, Main Campus and at Regional Offices i.e. 158.

### **Sample of the Study**

Sample is subset of population or representative values of the entire population having same characteristics chosen for decision making. Freedman et al (2006) defined sample is considered representative of the population if the characteristics of the sample are similar to the distribution of these characteristics in the overall population. Total population was taken as sample of the study i.e. 158 100 % sampling.

### **Tool of Research**

Certain tools are used to gathering or collection of data on the problem identified to draw conclusion and to suggest remedy. These are four major tools of research used for collection of data.

- Questionnaire
- Interview
- Observation
- Test and appraisal instruments



As regard selection of tools of research, the researcher used "Questionnaire" for this purpose.

After through review of literature and related research, reports, papers, documents, term papers and plans, the researcher developed an instrument consisting of 12 parts comprising on 98 items. While last part was open ended for seeking suggestions on training programs. The researcher personally visited to the respondents at AIOU, Main Campus, Islamabad and distributed 93 questionnaires and 65 questionnaires were mailed/emailed to administrative staff at Regional Offices. Out of which 126 responded. The questions were developed on Likert Scale.

Questionnaire was designed keeping in view the functional requirement and responsibilities of administrative staff. Part I consists on 13 item related to administrative tasks and Part II is related to supervision having 10 items. Part III is regarding record management pertaining to 7 items. Part IV is about maintaining to office efficiency which consists on 6 items. Part V concerned with computer skills for office use has 7 items. Part VI comprises on practical technical skills having 2 items. Part VII is related to team environment working consisting on 2 items. Part VIII is related to communication skills essential to run the office and 5 items were covered under this heading. Part IX is connected with public rationing necessary for office management consists on 5 items. Part X was linked with compliance of rules, regulation and statutes which were essential to run the business of the organization and this part was consisted on 4 items.

Part XI was about working behavior for successful completion of tasks as well as efficient management system and this part comprised on 15 items. Part XII is related to training opportunities provided by the AIOU to employees on different aspects which were covered through 22 items and last part i.e. XIII was to seek suggestion from the respondents regarding preference of training i.e. on the job training, off the job training or any other. Questionnaire form containing questions was carefully selected and organized related to the problem to get opinion/ observations from the target population. The respondents were requested to give their responses to each statement. The scale of each statement was in qualitative form i.e. Excellent, Good, Satisfactory, Poor and Very Poor.

### **Pilot Testing**

For the purpose of pilot testing, the researcher personally approached to 10 retired administrative staff that was not included in sample. The objective of pilot testing was to find out drawback of the questionnaire and to modify accordingly as well as to minimize the possibilities of misconception and ambiguity. Further more 3 retired person (grade 16) and 3 retired persons (grade 17) were also served with this questionnaire but no amendment was again suggested.

### **DATA ANALYSIS**

In the present study, the data was collected from the target population through questionnaire designed on Likert Scale. The data collected through questionnaire was analyzed on the basis of Mean Score. Accordingly in this portion the position of mean score in terms of different statements has been presented.

**Table 3.**  
**Demographical Data**  
**(Gender , age , Education, work Experience, training Experience )**

Type	Group	Count	Column N %
Gender	Male	114	90.58%
	Female	12	9.52%
Age	20-25	0	0%
	26-30	0	0%
	31-35	18	14%
	36-40	17	13%
	41-45	20	16%
	46-50	27	21%
	Total	126	100%
Education	B.A/B.SC	44	35%
	M.A/M.SC	69	55%
	M.Phil/M.S	8	6%
	PhD	1	7%
	Others	4	3%
Experience	1-5	47	37%
	6-10	28	22%
	11-15	15	12%
	16-20	18	14%
	21-25	8	6%
	26-30	5	4%
	31-35	5	4%
Training	On job	70	56%
	Of the job	46	36%
	Any other	10	8%

Table No 3. reflects that 14% respondents were of age in range 31-35 years, 13% of age group 36-40, 16% of age group 41-45, 21% were of age group 46-50 and 35% were age of above 50 and there was no age group fall in 20-25 and 26-30 range.

35% respondents were possessed Bachelor level qualification i.e BA/B.SC, 55% were M.A/M.Sc, 6% were having M.Phil/M.S qualification 7% were PhDs and 3% were those who possess qualification other than listed.

There were 37% of the respondents who possessed 1-5 years of experience and were 47 from the whole sample. 28 respondents have experience from 6-10 year and they were 22% of the whole sample.

15 respondents were in the range of experience 11-15 year and they were 12%, 8 respondents have the range of experience from 21-25 years and they were 6%, 5 respondents acquired work experience range from 26-30 and 31-35 and they 4%. 56% of respondents were in favor of on the job training, 36 % were off the job training, and 8 % suggested any other ways of training.

**Table 4.**  
**Administrative Tasks**

S No.	Statement	E	G	S	P	V P	Mean Score
1	Implementing Office Policies	53	21	15	13	24	3.5
2	Setting Performance Standards for Staff	24	19	31	17	35	2.8
3	Framing Office Procedure	30	15	20	18	43	2.8
4	Supervising Office Staff	43	40	20	8	15	3.7
5	Organizing office Operations	40	32	21	16	17	3.5
6	Executing Office Procedures	30	23	32	23	18	3.2
7	Scheduling of Task Completion	20	18	14	40	34	2.6
8	Making Horizontal and Vertical Communication	20	16	11	40	39	2.5
9	Initiating Supplies requisitions	35	23	14	35	19	3.2
10	Maintaining Liaison with other agencies/ Organizations/	30	25	18	41	12	3.2
11	Maintaining Office equipment	32	28	22	38	6	3.3
12	Maintaining Office Record	48	36	18	17	7	3.8
13	Coordinating Personnel Work	50	43	23	6	4	4.0

The highest mean score was 4.0 of statement No. 13 "Coordinating Personnel Work and next highest mean score was 3.8 of the statement No. 12 "Maintaining Office Record " and then the highest mean score was 3.7 of the statement No. 4 " Supervising Office Staff". Lowest mean score was 2.5 of statement No. 8 "Making Horizontal and Vertical Communication" and the next lowest mean score was 2.6 of statement No. 7 " Scheduling of Task Completion" and then the lowest mean score was 2.8 of statement Nos 2 and 3 i.e. "Setting Performance Standards for Staff and Framing Office Procedure".

These were weak areas and required training, hence these statements needed to be included in developing a training model.

**Table 5.**  
**Supervision The hig**

S No.	Statement	E	G	S	P	V P	Mean score
1	Defining Job Description/ Job Assignments	35	26	19	25	21	3.2
2	Counseling and Guidance of Staff	30	35	25	19	17	3.3
3	Monitoring of staff performance/work	35	30	28	19	14	3.4
4	Evaluating staff performance	20	16	7	50	33	2.5
5	Emphasizing placement of skilled/trained staff in the section/department	25	18	11	53	19	2.8
6	Realizing training needs for staff to improve efficiency and productivity	60	40	10	4	12	4.0
7	Providing training opportunities to staff	20	11	7	43	45	2.3
8	Initiating personnel matters for disciplinary actions	40	25	13	24	24	3.3
9	Recommending incentives for motivation of staff	25	15	12	45	29	2.7
10	Maintaining and observing rules, regulation and statutes etc	70	30	11	6	9	4.2

Best mean score was 4.2 of statement No. 10 "Maintaining and observing rules, regulations and statutes etc" and the second highest mean score 4.0 of statement No. 6 "Realizing training needs for staff to improve efficiency and productivity" and then the highest mean score was 3.4 of statement No. 3 "Monitoring of staff performance/work" and the lowest mean score was 2.3 of statement No. 7 "Providing training opportunities to staff" and the second lowest mean score was 2.5 of statement No. 4 "Evaluating staff performance" and the next lowest mean score was 2.7 of statement No. 9 "Recommending incentives for motivation of staff"

As these items were having lowest mean score, it was apparently reflected that there was need of training on these lines.

Accordingly these statements reflected to be inserted in developing a training model.

**Table 6.**  
**Training Opportunities provided by AIOU so far**

<b>S No.</b>	<b>Statement</b>	<b>E</b>	<b>G</b>	<b>S</b>	<b>P</b>	<b>V P</b>	<b>Mean Score</b>
<b>1</b>	<b>Training provided about Office Management</b>	<b>26</b>	<b>23</b>	<b>32</b>	<b>21</b>	<b>24</b>	<b>3.0</b>
<b>2</b>	<b>Training provided on the line of Legal and Legislative Drafting</b>	<b>7</b>	<b>5</b>	<b>35</b>	<b>32</b>	<b>47</b>	<b>2.2</b>
<b>3</b>	<b>Training provided about Law and Rules</b>	<b>2</b>	<b>1</b>	<b>17</b>	<b>46</b>	<b>60</b>	<b>1.7</b>
<b>4</b>	<b>Training opportunities provided about Management Skills by AIOU</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>47</b>	<b>68</b>	<b>1.7</b>
<b>5</b>	<b>Training provided regarding Personnel Management by AIOU</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>48</b>	<b>72</b>	<b>1.5</b>
<b>6</b>	<b>Training opportunities provided regarding Office Procedure and Practice</b>	<b>6</b>	<b>7</b>	<b>13</b>	<b>39</b>	<b>61</b>	<b>1.9</b>
<b>7</b>	<b>Training provided by the University regarding Treasurer Rules</b>	<b>6</b>	<b>8</b>	<b>10</b>	<b>39</b>	<b>63</b>	<b>1.8</b>
<b>8</b>	<b>Training provided at Rules of Business</b>	<b>5</b>	<b>3</b>	<b>15</b>	<b>40</b>	<b>63</b>	<b>1.8</b>
<b>9</b>	<b>Training provided at General Financial Rules (Leave, Pension, Gratuity etc)</b>	<b>4</b>	<b>6</b>	<b>7</b>	<b>51</b>	<b>58</b>	<b>1.8</b>
<b>10</b>	<b>Safety Training provided by the University</b>		<b>3</b>			<b>68</b>	<b>1.7</b>
<b>11</b>	<b>Computer training (M.S Word, Excel, Power Point, MS Access, Internet, Email Database Management etc)</b>	<b>2</b>	<b>29</b>			<b>19</b>	<b>3.2</b>
<b>12</b>	<b>Computer training advance level</b>		<b>-</b>	<b>4</b>	<b>46</b>	<b>-</b>	<b>-</b>
<b>13</b>	<b>Training about Notices and Drafting Procedures and Techniques provided by AIOU</b>		<b>4</b>	<b>40</b>	<b>12</b>	<b>72</b>	<b>1.7</b>

**Table 7.**  
**Training Opportunities provided by AIOU so far**

S No.	Statement	E	G	S	P	V P	Mean Score
14	Training provided regarding Efficiency and Disciplinary Rules by AIOU	5	3	2	41	75	1.6
15	Training provided regarding Removal from Service (Special Powers) Ordinance 2000 by AIOU	6	4	3	39	74	1.6
16	Training provided by the University about Performance Evaluation and Quantification of ACRs	7	4	2	52	61	1.8
17	Official Communication Skills	29	27	32	12	26	3.2
18	Training provided regarding Drawing and Disbursing Procedures/ Rules	20	13	7	35	51	2.3
19	Training provided about arranging meeting, preparation and compilation of agenda	11	8	12	43	52	2.1
20	Training provided by the University about Recording minutes of meetings	11	14	17	32	51	2.2
21	Security and use of office equipments (Telephone, Fax, Photocopier, Computer etc)	40	26	32	14	14	3.5
22	Training so far provided by AIOU about Civil Servant Appointments Promotion and Transfer Rules.	5	6	2	53	60	1.8

There were no responses from the respondents on statement No. 12 "Computer training advance level", thus employees must be provided training opportunity on advance level computer training. The highest mean score was 3.5 of statement No. 21 "Security and use of office equipments (Telephone, Fax, Photocopier, Computer etc)" and second highest mean score was 3.2 of statement No. 11 "Computer training (M.S Word, Excel, Power Point, MS Access. Internet, Email, Database Management etc)" and then the highest mean score was 3.0 of statement No. 1 "Training provided about Office Management". The lowest mean score was 1.5 of statement No. 5 "Training provided regarding Personnel Management by AIOU" and the next lowest mean score was 1.6 of statement No. 14 "Training provided regarding Efficiency and Disciplinary Rules by AIOU" and statement No. 15 "Training provided regarding Removal from Service (Special Powers) Ordinance 2000 by AIOU" and then the lowest mean score was 1.7 of statement No. 10 "Safety Training provided by the University" and statement No. 13 "Training about Noting and Drafting Procedures and Techniques provided by AIOU".

These were weak performance area and required training on these lines, thus these items were required to be included in developing a training model of human resource development.

## **CONCLUSIONS AND DISCUSSION**

It is concluded that the administrative staff do not have knowledge regarding "designing filing system". The conclusion is drawn that the administrative staff do not know about "defining procedure for record retention". It is sum up that the administrative has not been provided "computer advance level training by AIOU. The administrative staff has lack of knowledge regarding, "Making Horizontal and Vertical Communication", "Scheduling of Task Completion", "Setting Performance Standards for Staff" and Framing Office Procedure. The conclusion is drawn that the administrative staff is not concentrating on "providing training opportunities to staff", "Evaluating staff performance" and "Recommending incentives for motivation of staff".

The administrative staff is not familiar "using utilities software programs, "Database software programs" and "utilities software programs" It is concluded that the administrative staff is "unable to work with noisy equipment" The administrative staff is unable "to work as team leader". It is concluded that the administrative staff is unable in respect of "Convincing and logical reasoning" and "Speaking effectively". The administrative staff is not taking active part in "assisting to the community in different events as volunteer". It is concluded there are very little number of staff who are able "working with minimal supervision" and there is also lack of "self motivation" and "using analytical skills". The University has not provided training opportunities to the administrative staff regarding "personnel management", "Efficiency and Disciplinary Rules and Removal from Service (Special Powers) Ordinance 2000", and "Noting and Drafting Procedures and Techniques".

## **RECOMMENDATIONS**

The following recommendations are made on the basis of the results of the study.

- There is no budget allocation for staff development and training programs for administrative staff so a separate budget allocation may be made for this purpose.
- A separate department of staff development may be established under the supervision of Registrar.
- Staff Dev. Comm. may chalk out training programs with the help of academic departments as per demand of department of Staff Dev.
- The University may start a joint venture program with Secretarial Training Institute, Islamabad for arranging training of the areas highlighted in the finding for administrative staff of Allama Iqbal Open University.
- Computer Science Department may continue Computer Staff Training program which had been discontinued.
- For advance level computer training program a joint venture project may be started by the AIOU in collaboration with Federal Bureau of Computer, Govt of Pakistan.

- Administrative staff may be bound to participate in training program and after training completion evaluation should be made and evaluation results may be linked with promotion of employee in the next grade.
- Non credit courses may be launched by the AIOU on the pattern of Daftari Urdu for Federal and Provincial Officers and it may be made mandatory for all administrative and this may be requisite qualification for administrative staff for further promotion/selection failing which their cases may not be considered in Departmental Promotion Committee and Selection Committee.
- Training may be arranged for new entrants before posting in the sections/ departments.

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## **INFORMATIONAL AND EDUCATIONAL ENVIRONMENT FOR TEACHING MATHEMATICS OF THE FUTURE ENGINEERS OF ART MATERIALS PROCESSING DEPARTMENT**

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### **ABSTRACT**

The description of Informational and Educational Environment that helps to facilitate the process of teaching mathematics of future engineers of Art Materials Processing Department at technical universities is presented in this article. The development of Informational and Educational Environment on mathematics will help to organize an intensive students activity in studying of mathematics as well as intensive activity of teachers whose work is to provide means and support for such types of educative processes.

Training results of Informational and Educational Environment application are not limited to acquiring certain amount of mathematical knowledge and skills but also imply the development of universal learning approaches and obtainment of personal experience.

Informational and Educational Environment's core element is informational and educational object medium in the field of mathematics. The content of the course was selected on the basis of utilizing comparative thesaurus approach, the main idea of which is to analyze the most popular mathematical and subject oriented textbooks to search out the most used mathematical and conceptual constructs. The process of teaching mathematics to future engineers of Art Materials Processing Department is based upon class exercises in higher education establishment (lectures, seminars and laboratory-based work), individual and group consulting tutoring, integrated lessons and out-of-class individual work.

The main teaching methods include engineering research method, systemic dynamics method and mathematical abstractions dynamic visualization method. Traditional means of education are combined with electronic multimedia sources, mental maps, simulators and interactive tests.

Results evaluation section includes electronic testing according to structure of mental maps in order to determine level of mathematical knowledge. Conducted pedagogical experiment showed that "Mathematical basis of painting and architecture" course training raises the level of mathematical knowledge of bachelors of Art Materials Processing Departments at technical higher educational establishments.

**Keywords:** Mathematical training, art materials processing department, technical higher educational establishment.

## INTRODUCTION

Currently, the basis of fundamental education, which is provided at higher educational establishments, is formed by the level of mathematical knowledge acquired with the help of computer applications. It is impossible to cope with professional job tasks, which demand skills in application of computation experiment method, simulation modeling and data processing, without intensive usage of computer technologies and mathematical constructs.

The importance of high quality mathematical teaching from the school stage is also defined by the fact that learning process activates processes of cognitive abilities and some traits of students' personal character development.

Taking into account how important the level of knowledge in mathematics is in all aspects of science and technical equipment, it is fair to say that level of professional competency depend on the quality level of mathematical knowledge. This demands higher standards of mathematical education which means higher level of mathematical knowledge of students. However, the results of surveys conducted recently showed that level of mathematical knowledge deceases every year.

This problem is particularly acute for students of Art Materials Processing Departments of technical higher educational establishments. It have identified the following reasons for the low level of mathematical knowledge:

- low level of interrelation of mathematics with vocational subjects and, as a consequence, lack of interest in mathematics;
- non-existent consideration for specific traits of perception of mathematical material by students of Art Materials Processing Departments;
- inadequate visualization of learning and teaching materials in mathematics.

**Development of Informational and Educational Environment for teaching of mathematics is seen by us as solution to this problems.**

**Transformation of the world into a single informational space, constant increase in volumes and update rates of information presented in a variety of forms afford ground for considering teaching process in general and teaching mathematics in particular, as a process, which is based on process of searching for, interpreting and processing information, process of information exchange with the help of ICT and process of creating new information (Pak, 2011). Development of Informational and Educational Environment (IEE) is now regarded as one of the necessary conditions to achieve a new quality of education.**

**The development of IEE for the purpose of teaching mathematics will help to organize intensive students activity in the field of acquiring of mathematical knowledge, as well as intensive activity of teachers, whose work is to provide means and support for such types of educative processes.**

**Training results of IEE application are not limited to acquiring certain amount of mathematical knowledge and skills, but also implies development of universal learning approaches and obtainment of personal experience.**

**The term "IEE" is relatively new and can be defined differently in various types of academic literature. The main concept of this term has been studied in the works of many scientists.**

**To summarize these definitions, we can say that the Information Environment is a set of:**

- information resources, which contain a variety of information provided on specific recording media;
- organizational structures that ensure its functioning and development;
- means of information exchange between teachers and students that provide both of them with access to information resources by means of software and hardware, as well as by means of organizational regulations.

**In the current study we understand the term *Information and Education Environment* as a set (system) of interconnected and interacting with each other information environments of different areas of knowledge that are sensitive to changes of information in outer environment and provide training, education and development of personal qualities of students.**

**The most common feature of any system is that its elements (i.e. the minimum structure-forming units) have a divisibility limit within its borders and functional and structural uniqueness as well as functional integration.**

The second feature of the system lies in the fact that each element performs its function only in case of interaction with other elements of the system. Aforementioned features of the system are consistent in general with the essence of the concept put forward by (Kuzmina, 1980).

The key elements of the IEE for mathematical training as the system include:

- integrity of the components that contribute to achieving the goal;
- dependencies and interdependencies between the components;
- presence of the driving concept, or leading idea, needed for combining the components;
- introduction of components common qualities.

One of the important properties of IEE in terms of mathematical training is its openness, which manifests itself through the internal dynamics of its elements and communication between them. Basic functions of IEE in terms of organization process of mathematical training in accordance with the structural logical model of mathematical preparation for future teachers of natural science are the following:

- ensuring open access to information, including access through network, and information exchange between the participants of educational process;
- developing demand for information (scientific, professional, educational and training materials) and information culture of students;
- coordination of students informational activity;
- brain building and development of students cognitive abilities;
- implementation of continuity process of mathematical training methods within the "school-college of education" system;
- implementation of professional orientation method in mathematical training process;
- implementation of interdisciplinary relations of mathematics with vocational subjects.

Thus, functional components of IEE are environments, either of which, on the one hand, is an independent structure with its specific structural and informative content and implementation of its specific functions, and on the other hand, there is a inherent interrelation with other media. This interrelation provides for a new feature of environment unity, as well as for new environment in the form of a structural component of the whole educational environment.

## **STRUCTURE OF IEE FOR MATHEMATICAL TRAINING**

All aforementioned factors has determined the choice for development following mediums within IEE for mathematics training of future engineers of Art Materials Processing Departments at technical higher educational establishments: Informational and Scientific Medium (ISM), Informational and Professional Medium (IPM), Informational and Didactic Medium (IDM), Informational and Educational Subject Medium (IESM) (Figure 1).

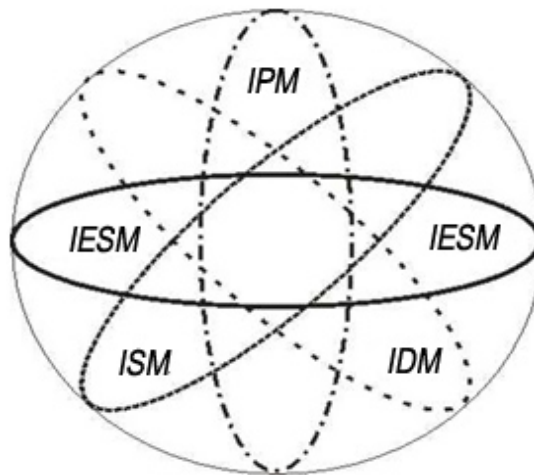


Figure 1.

#### Structure Of IEE for Mathematical Training Process

(Source: Tatyana P. Pushkaryeva, monograph. (2013). Scientific and methodical bases of training in mathematics of the natural sciences future teachers from the information approach positions, Krasnoyarsk, Russia)

**ISM** is a complex of search and expert systems, as well as electronic versions of most significant scientific documentary sources and links to them: bibliographic descriptions of scientific papers on the problems of the art material processing, a list of the main sources of information on scientific and methodological problems in this area (author's abstracts, monographs, magazines, textbooks and teaching aids). Information and Scientific Medium development, as a component of a single IEE for bachelor's mathematical training, helps to eliminate education process' lagging behind current level of scientific knowledge and to ensure that one of the important didactic principles, the principle of scientific approach to teaching of mathematics, is carried out.

**IPM** is a repository that stores state educational documents for higher educational establishments, text and links to technical and fiction literature and academic materials.

**IDM** includes classical and didactic information principles of mathematical training for students of Art Materials Processing Departments at technical higher educational establishments.

**IESM** is a major component of IEE, which provides for sufficient level mathematical competence of future engineers.

Currently, the fact of "development of informational and educational environment by each university is not an innovation, but one of the State requirements imposed on Higher Educational Establishments" (Shapiro, 1990).



And indeed, rapid development of computer technology, high rate of knowledge update process (including basic types of the knowledge), process of turning information into a commodity and into an important resource of social development and management tool have set up a task for higher education institutions to prepare specialists with new set of qualities, which are:

- ability to adapt to rapidly changing conditions of modern society, to acquire on an individual basis all the knowledge and skills necessary for successful carrying out job tasks, to apply them in practice for coping with a wide variety of problems;
- ability to think critically and independently, ability to see problems emerging in the real world and to seek rational ways to solve them, using modern technology;
- ability to use information intelligently, to be able to retrieve and process information, as well as to use information resources, including the global ones, effectively in order to cope with job tasks.

With the development of open education the problems of its development and maintenance in the present state of its methodological and technological basics became the most important one. The need to equip individuals with the desired set of educational competencies, capable of continuously replenish their knowledge, plan their learning process (choose methods, means and forms of training) using access to training resources at any time and any place, requires the development of conditions for balanced, uniform operation of all structural components of the educational process. In this regard, IESM plays a crucial role within IEE.

## **DESCRIPTION OF IESM FOR MATHEMATICAL TRAINING**

### **The Concept of IESM**

The term *Information and Education Medium* (IEM) denotes the totality of various subsystems, which provide informational, technical and academic conditions for organization of educational process, as well means for organizing participants of educational process. In the context of growing informational support of society and education process the necessity to create a single concept of IEM development have emerged. Such IEM should be fully capable to take into account the new possibilities of development, distribution and application of multi component distributed and integrated databases and knowledge-oriented education, as well as national requirements for the education system, which should be consistent with global trends.

The process of IEM development was the subject of a number of studies (Bashmakov and others, 1997). These authors propose various approaches to understanding the nature and structure of environment. However, in all of the studies learning environment components are divided into two categories as subjects and objects. The subjects of the educational process are students and teachers. "Objects are training resources and training tools of learning activities, methods, material resources, pedagogical process management area, ways of communication (organizational and administrative, promotional and motivational, ways of retaliatory behavior, technical and emotional ways)", (Solso, 2006).

The term *Informational and Educational Medium of higher educational establishment* refers to a part of the national information and educational environment, which includes:

- information collections,
- telecommunication facilities,
- scientific and methodological support for disciplines,
- vocational subjects areas and
- professions, databases and knowledge bases, remote access to a variety of information resources, training systems and networks, digital libraries, informational education systems description and implementation technologies.

Higher educational establishment *Information systems* are means of information technologies that are used in the training process and are able to determine the entire education sector and its individual components, such as objectives, content, methods, forms of training, education and development of students in educational establishments of any level and profile.

Informational and Educational Subject Medium for mathematical training is a component of Informational and Educational Environment of the higher educational establishment. Slobodchikov defines IESM as "an open educational system formed on the basis of informational of educational resources, computer training facilities, modern means of communication, educational techniques aimed at guiding creative, intellectual and social development of personality", (Slobodchikov, 1997).

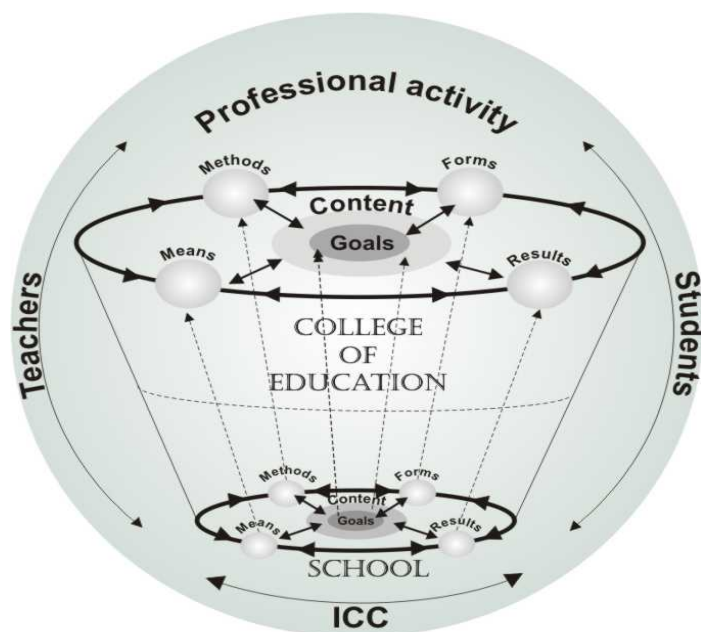
In the current study the term *informational and educational medium* for mathematical training refers to series of educational, information and communication material and technical conditions necessary for organization of educational informational interactions between students, teachers and ICT, as well as for developing of selected components of the mathematical training for future engineers of Art Materials Processing Department, (Pushkaryeva, 2013).

### **IESM Components**

In accordance with aforementioned definition of IESE for mathematical training of Art Materials Processing Department bachelors at technical higher educational establishment the following components were allocated as:

- target component,
- informative component, informational and
- communicational component, resource component, technological and performance components (Figure 2.).

Mathematical training in schools and colleges of education have the same main objective that can be formulated as the development of basic mathematical knowledge and skills required for educational, practical and professional activities, and laying the foundation for development of mathematical skills, i.e. competences, and formation of a systemic and intuitive thinking needed for different activities.



**Figure 2.**

**Informational and Educational Subject Medium for Mathematical Training**

(Source: Pushkaryeva, P. T. (2013). *Scientific and methodical bases of training in mathematics of the natural sciences future teachers from the information approach position*, monograph, Krasnoyarsk, Russia)

This goal includes a group of integrated goals of mathematical training for schools and colleges of education with due regard to FSES HVE requirements for students of Art Materials Processing Department at technical higher educational establishments and FSES requirements for secondary (full) basic education:

- organization of mathematical training process in accordance with modern achievements of science;
- intellectual development of students trained with the use of principles of mathematics as a science;
- acquisition of specific mathematical knowledge, skills and abilities, that can be applied in practical and professional activities, will help students during the course of studying related disciplines and allow to continue their education process;
- personal development during the course of obtaining mathematical skills and participating in mathematical activities;
- formation of general overview about existing ideas and methods in mathematics, about mathematics as a form of description and method of understanding reality; as well as expansion of main objectives from the standpoint of informational approach to learning mathematics:
- development of mathematical thinking and mathematical intuition;
- training of mathematical modeling,
- development of skills for using ICT potential.

**Content selection for mathematical course is carried out in a hierarchical manner starting from the conceptual, "intuitive" level, followed by enhanced studying of the discipline. This method provides succession and continuity of mathematics content. Introduction of Mathematical Modelling section in the content of mathematical course provides a link between mathematics and vocation-related subjects, which increases the level of understanding of abstract mathematical concepts and promotes interest in the discipline.**

**Furthermore, the basic knowledge of mathematical modeling provides additional opportunities for students to choose a direction for further scientific research (course paper, graduation paper, master course, postgraduate training program etc.) and professional activity.**

**Information and communication component defines the relationship between participants of educational process. According to I. V. Robert these relationships involve interactions of students with teachers, fellow students, resources with the help of ICT (I. V. Robert, 2008). Such type of relationship structure provides for students active approach to the learning process and implements impact of each component of IESM and ICT on other components.**

**Resource component comprises:**

- **educational learning materials in electronic format (mathematics textbooks, study guides integrated mathematical-profile courses, workshops, a list of topics for projects, a set of vocation-related tasks for mathematical modeling);**
- **software (spreadsheets, mathematical calculation software and integrated field-specific mathematical analysis software packages, programs for mental maps construction, Internet access);**
- **training system (electronic encyclopedia, complex tasks for mathematical intuition development);**
- **academic performance rating system (tests to identify the level of development of mathematical competence and mathematical modeling skills);**
- **material support of educational process (university laboratories and students' computing tools which is used for training).**

**Technological component combines methods, means and forms of teaching mathematics to students of science faculties which contribute to development of selected mathematical training components.**

**The choice of methods and means of education is determined by targets of learning process at every stage of continuous process of student's mathematical training. Main selection criteria are static and dynamic visualization of mathematical concepts and computation layouts.**

**In accordance with education process objectives and special aspects of students' development all the components of IESM are theoretically designed and then practically simulated: resource potential, technologies, information and communication interaction between participants of educational process.**

Intention, structuredness and productivity are quality criteria of IESM. Intention can be expressed through a system of indicators characterizing quantity and quality of system resource potential; structuredness is expressed through easiness of navigation and level of user friendliness of these resources; and productivity is expressed through the system of object, metaobject and personal results.

Level of mathematical training diagnosis from the standpoint of informational approach involves determining the level of mathematical knowledge and acquired skills of mathematical modeling.

### **Implementation of IESM for Mathematics Training of Art Materials Processing Department bachelors**

We used Moodle distance education system (Modular Object-oriented Dynamic Learning Environment) to construct IESM for mathematics training for future engineers of Art Materials Processing Department on the basis of Polytechnic Institute of the Siberian Federal University (SFU) facilities.

Moodle is a course management system (CMS), also known as Learning Management System (LMS) or Virtual Learning Environment (VLE). This is a free web application that provides an opportunity for teachers to create effective on-line pages. Moodle modular Object-oriented Dynamic Learning Environment is focused primarily on organization of interaction between teacher and students, organization of distance learning courses, as well as support for full-time study.

Moodle distance learning system is installed on SFU server. It is available to any authorized user anywhere and at any time, making use of the learning environment comfortable for both teachers and students in all modes of study. Following roles can be used in Moodle:

- administrator (can do everything online in every course);
- creator of the course (can create a course and teach within created course);
- teacher (can do a lot of things within the course, has access to editing section of the course);
- teacher without the right to edit course (can teach students, evaluate their level of knowledge);
- student (has access to course materials);
- guest (can have access to some of the courses in case guest access function is active).

As mentioned above, the main component of IEE is IESM used for mathematical training of future engineers of art material processing faculty.

The main objective of IESM is shaping selected components of mathematical training. The necessary condition for mathematical training using IEE and IESM is the availability of computer class for practicing mathematics with access to network technologies.

Mathematical training using IESM implies a number requirement that has to be fulfilled by students:

- understanding importance of IESM training for further education and development;
- ability to perform tasks according to instructions unattended;
- ability to find all necessary additional information on the Internet;
- ability to work in IESM complete and formalize tasks in a correct manner;
- ability to work in cooperation with other participants;
- knowledge of and compliance with the rules of behavior in eLearning environment;
- awareness of copyright rules and laws related to the distribution and use of digital content;
- ability to formulate questions and seek the help of course leaders and fellow students in case of arising difficulties;
- ability to assist other participants in training, to advise them on the use of ICT tools to formalize their work;
- compliance with the rules of competent writing when making requests to IESM.

Organization of continuous mathematical training implies not only mathematical content selection for different levels of the course, but, above all, mathematical activity, because it is mathematical activity that can be vertical and continuous. Vertical model of mathematical training is realized directly at the expense of engineering research activity, as soon as it is based on the "lower level" on existing mathematical knowledge and knowledge of other disciplines and is directed "upward" for further subject-oriented training.

Under the term *mathematical activity* we understand mental activity aimed at mastering mathematics, providing the ability to expand the knowledge, perceived or created by subject. The main types of;

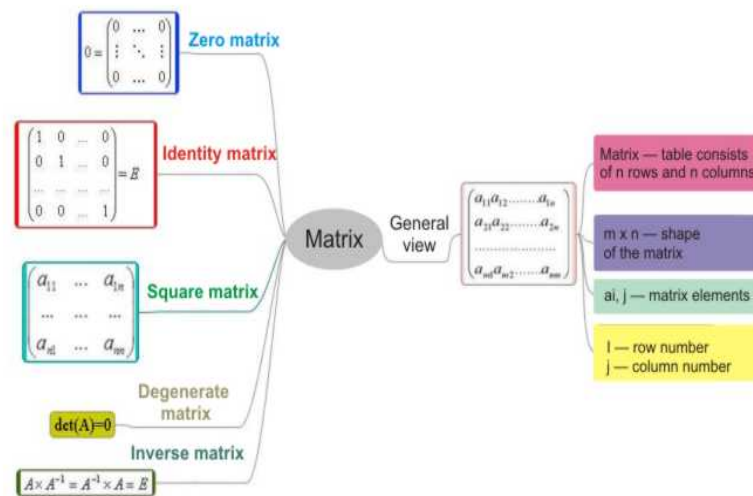
- mathematical activity that we have identified are,
- educational activity and
- informative activity, engineering research activity and self-directed learning activity.

The process of training and development of mathematical knowledge, mathematical problem solving and mathematical modeling skills are achieved by Galperin's gradual formation of mental activity method application, as well as by application of problem solving and engineering research methods.

The traditional means of teaching are supplemented by electronic media resources, mental maps, simulators and interactive tests.

Mental maps and Flash-animation are used as *main imaging and data compression techniques* together with educational material presentation as a single superpositional content. Mental map is the way of depicting thinking and structuring information processes in a visual form that allows a person to manage the information flow (Novak, 1990, 2002). Outwardly, it resembles interrelated brain neurons. It provides perfect match between visual perception and basis behind the construction of this information.

The advantage of such maps is in the ability to see the whole picture on one sheet with all interrelations, structure and logic behind it (Kalitina and others, 2015). This method helps to provoke more active functioning of the right hemisphere of the brain, which is usually inhibited, increase the level of intuition, type of thinking process localized in this hemisphere (Figure 3.).



**Figure 3.**  
**Example of mental map (Source: Tatyana P. Pushkaryeva, monograph)**  
 (Source: Pushkaryeva, P. T. (2013). *Scientific and methodical bases of training in mathematics of the natural sciences future teachers from the information approach positions*, monograph, Krasnoyarsk, Russia)

Mental maps drawing process helps to develop not only logical but creative thinking and achieve memory and imagination training. Mental maps constructing method is based upon functioning of two hemispheres of the brain, in contrast to method of linear recording (Zdenek, 1997).

A special program was developed to train skills of mathematical modeling which is used to visualize some of subject oriented concepts of "Basics of casting process" course for Metallurgy Department, Foundry Production Of Ferrous And Nonferrous Metals specialization (Figure 4.) (Gilmanshina and others, 2012).

This software allows you to analyze and compare the different parameters of a mathematical model, such as wetting qualities of material under the influence of different liquids, as well as to calculate basic indicators (wetting quality contact angle, work of adhesion, spreading coefficient, etc.).



**Figure 4.**  
**AppSV interface**

(Source: Gilmanshina, T. and et.al. (2012).Computer state registration certificate) (2012). (Computing program of studying of wettability of materials liquids «AppSV», Krasnoyarsk, Russia)

**The results evaluation unit** includes three levels of mathematical training criteria and indicators for future Art Materials Processing Department engineers: basic, competent and creative. Level of mathematical training is based upon total score. Special system was created to allow for tests with three-level tips in accordance with mental maps structure.

## **RESULTS**

Pedagogical experiment of mathematical training for future art materials processing engineers revealed that types of IEE and IESM, developed for mathematical training, provide an increase in levels of mathematical knowledge of bachelors due to:

- **unity of goals of mathematical training process;**
- **continuity of content, methods, forms and means of mathematical training process;**
- **ensuring continuous mathematical activity;**
- **a set of special training means and methods (mathematical training courses integrated with vocation-related subjects, mathematical modeling method, dynamic visualization of mathematical information method, system dynamics, universal means of control and diagnostics knowledge);**
- **informational "subject-object-subject" interaction of educational process participants.**



The results of the questionnaire survey for of Art Materials Processing Department engineers, as well as some evaluation results of the training process, revealed that mathematical training using IEE increases motivation, mathematical abstractions perception level due to taking into account psycho-physiological characteristics of students, training classes attendance rate, increases percentage of extracurricular self-study activities and level of knowledge not only in mathematics, but also in vocation-related subjects.

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## QUALITY AND THE FUTURE OF HIGHER EDUCATION

Written by Dr. Mansoor Al AWAR

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Reviewed by GLOKALde



In his new book, "Quality and the Future of Higher Education," Dr. Mansoor Al AWAR explores the features of higher education in the Arab world, which pose various challenges for any university in the region. He suggests Quality as a solution for these challenges, giving a detailed account of the objectives and the tracks of quality in higher education institutions. In chapter 2, the author discusses quality in smart learning and smart universities, examining its aspects, foundations, and quality assurance. In chapter 3, Dr. Mansoor presents "Al Awar Scale" which defines the level of quality at universities. Discussing the first quality track, the author introduces a major indicator, i.e. the 'Student-Teacher Ratio' that must be considered in the educational process. This ratio represents the extent of attention a student receives within a classroom. It can indicate the negative impact of high-density classrooms, a notion evidenced in the book by the value of this ratio at some American universities. In chapter 2, the author draws an analytical comparison of smart universities and conventional universities, demonstrating the advantages of smart universities based on the quality tracks illustrated in chapter 1, including the use of electronic media. The chapter explains how the roles of the student and the teacher within the new learning system have changed in a way that drives student involvement and interaction. These changes help expand student knowledge circle, eliminates time and place constraints, develops creative skills, and provides learning to all, including professionals, employees, Arab women and learners with special needs.

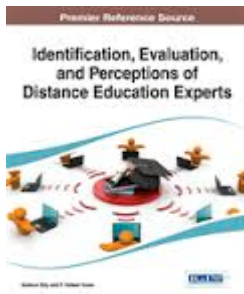
The author concludes chapter 2 with quality assurance in smart learning, based on their procedural, academic, strategic and educational dimensions, in addition to other dimensions related to change, economy and technology. The following part deals with challenges faced by smart learning institutions like academic accreditation in the Arab countries, the dominant conventional thinking within accreditation authorities, and the recency of this approach for learning in the region. Moreover, this chapter discusses measures needed to overcome these challenges. Chapter three of the book consists of "Al Awar Scale" for quality at universities. The Scale helps these higher education institutions measure their overall performance and quality level. Comprised of 125 questions for a university to answer using approved research methods, the result of scale can be used as a reliable estimate of the quality level of performance at such university. Available from <http://estore.hbmeu.ac.ae/product/68734>

## **IDENTIFICATION, EVALUATION AND PERCEPTIONS OF DISTANCE EDUCATION EXPERTS**

**Edited by Gülsün EBY and T. Volkan YUZER**

**Published in 2015 by IGI Global Press. The book is 354 pages. The ISBN13 of the book is 9781466681194 and DOI Number is 10.4018/978-1-4666-8119-4.**

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The focal point of this edited book is to define Distance Education Expert (DEE) by analyzing and discussing the required qualifications of DEE under the titles of definition, general characteristics, skills and professional knowledge. While having a debate on the recently mentioned concerns related to DEE, the dimensions of management, communication, pedagogy, technology and evaluation of Distance Education fields are also discussed.

This book is divided into 3 sections namely;

- **Introduction,**
- **Who are Distance Education Experts (DEE) and**
- **Research and Theory Related to Distance Education Experts' with 16 chapters in total.**

Below are the parts that separately explain each chapter in detail:

### **SECTION-I INTRODUCTION**

#### **Chapter 1**

#### **Well- Recognized Experts in Distance Education: Code of Ethics and Professional Practice**

The chapter, written by Gülsün EBY and T. Volkan YÜZER, focuses on defining, analyzing and discussing the qualifications of DEE. The authors of this chapter clarify the roles of DEE within the scope of current and future trends, needs and priorities emerged in a post-modern world that currently affect DEE.

## **SECTION-II** **WHO ARE DISTANCE EDUCATION EXPERTS (DEE)**

### **Chapter 2**

#### **Integrating Field of Communication to the Distance Education: A New Perspective for DE Leadership**

The chapter primarily focuses on DEE roles in Turkey in relation with the aspects of designing, evaluating, managing and sustaining communication aspects in distance education. Tülay GÖRÜ DOĞAN, the author of this chapter, mainly explains distance education as a subdivision communication science in detail.

The analysis made by the author opens a new path for the experts, stakeholders and researchers and distance education leaders regarding with the roles, responsibilities and competencies.

### **Chapter 3**

#### **The Academic Views from Moscow Universities on the Future of DEE at Russia and Ukraine**

The authors of this chapter: Vardan MKRTTCHIAN, Bronyus AYSMONTAS, Md Akther UDDIN, Alexander ANDREEV and Natalia VOROVCHENKO, have been emphasizing the importance of psycho-pedagogical issues of Distance Education learners.

In this connection, the influence of DE on Russia and Ukraine is investigated within the current literature that is reviewed within the context of content development, learning carried through pedagogy, instruction and cyber ubiquitous learning designs.

### **Chapter 4**

#### **Understanding of Leadership in Distance Education Management**

In chapter four, the main characteristics and qualifications of leadership in Distance Education are addressed by Gülay EKREN, Serçin KARATAŞ and Uğur DEMİRAY. In this chapter, the literature concerning theories in leadership, education leadership and distance education leadership are taken into great consideration. All the mentioned areas are perused according to distance education management processes as well.

### **Chapter 5**

#### **Identification of a Distance Education Expert**

In this part of the book, Simber ATAY, tries to underline the innovative characteristics and global capacity of Distance Education. The author designates DEE as a sophist who might produce the theory for Distance education and divulges the affinities of this ideal expert in a list.

The author sees the Distance Education systems as an inspirational source for conventional learning systems in which DEE take a crucial part.



## **Chapter 6**

### **The Importance of Distance Education**

#### **Experts in the Organizational Development**

#### **Process of Distance Education Institutions: A Theoretical Evaluation**

In this chapter, Eren KESIM scrutinizes DEEs as a part of Distance Education institutions and their organizational development process. According to the author, the experts play an essential role to bring Distance Education to a successful conclusion. Therefore, on both individual and organizational level, the efforts of DEEs should be taken into consideration. Concordantly, the efforts of DEEs as experts are significant for current and future research and applications of Distance Education.

## **Chapter 7**

### **New Communication Technologies'**

#### **Influence on Distance Education Environments:**

#### **Changing Roles and Competencies of DE Experts**

Murat Ertan DOĞAN, as the author of this chapter, indicates the great influence of communication technologies in the design process of Distance Education. In this regard, the chapter explores the role of academics and media professionals as distance education experts and their participatory role during course design.

The required skills of distance learning leaders and distance education experts are also discussed within the frame of theoretical approaches specified in the chapter with details.

## **Chapter 8**

### **The Experts in Design of Distance Nursing Education**

In this chapter Belgin BOZ YUKSEKDAG observes how experts should approach the design of distance nursing education. For this purpose, the author focuses not only the continuous and well-structured distance nursing education programs, but principles for a good nursing education as well. In this connection, all the dimensions including transition from teacher-centered approach to learner-centered approach, learning styles of learners, technology, interaction, presentation of content, and support services are addressed in this chapter.

## **Chapter 9**

### **Economic Importance of the Distance Education Expert**

The author is Mediha TEZCAN discourses how knowledge has become a critical commodity for distance education institutions. As intellectual capital stock is a fundamental element for the distance education institutions, the human contribution is of great importance. In this regard, the chapter discusses the issues related to job skills, workplace effectiveness, economic and environment friendly actions, personal capital and intellectual capital in order to remark economic importance of the DEE.



**SECTION -III  
RESEARCH AND THEORY  
RELATED TO DISTANCE EDUCATION EXPERTS**

**Chapter 10**

**An Action Research on Design, Delivery, and Evaluation of a Distance Course in a Vocational Higher Education Institution**

Erman UZUN, M. Yasar OZDEN and Ali YILDIRIM, in this chapter, seek teaching in a technological environment that confronts instructors with various challenges related to design, development and usefulness.

From this perspective, the basic aim of this chapter is to design, develop, deliver and evaluate a new distance Web design course within the context of vocational higher education. Proactive action research forms the framework of this chapter.

**Chapter 11**

**Online Instructors as Distance Education Experts**

Libi SHEN, the researcher of this study, deliberates the competencies of online teachers and the binding standards of technology accordingly.

The questions the main behavioral, cognitive and emotional characteristics of distance education instructors & future research directions are also recommended.

**Chapter 12**

**Identifying and Examining Degree-Granting Programs for Distance Education Experts: A Preliminary Analysis**

The chapter's authors: Serpil KOCDAR and Nejdet KARADAG have revealed the results of a preliminary analysis of degree granting distance education expertise programs offered worldwide.

Including 27 degree-granting programs in 18 universities are identified in the chapter. All these programs are examined from various aspects such as aims and target population, educational models, delivery methods, admission and graduation requirements of the programs and proposed career opportunities by these programs. Concisely, the primary aim of the study is to contribute to the research on leadership and expertise in distance education.

**Chapter 13**

**Distance Education Experts and the Distance Education Ecosystem: An Analysis on Learner and Educator Perceptions**

M. Banu GUNDOGAN in this chapter probes the role of Distance Education Educators in a Distance Education Ecosystem. Perceptions regarding the function of DEEs within Deco are examined by the author in this study. To reach this aim, twofold Delphi study: one conducted with experienced DE Learners (DEL) and the other with (DEE) is carried out to differentiate descriptions on both concepts.

#### **Chapter 14**

##### **Model in SM of DEE Based on Service-Oriented Interactions at Dynamic Software Product Lines**

Vardan MKSTTCHIAN, Alexander BERSHADSKY, Alexander BOZHDAY and Ludmila FIONOVA suggests an intellectual environment based on the concept of Triple H-Avatar. The chapter covers the issues of technology integration, intelligent tutoring web services and wireless telecommunication systems to form a concept of building a distance learning system.

The avatars, as intelligent software agents, are also discussed and exemplified in terms of educational content, interface, software and technical support.

#### **Chapter 15**

##### **Faculty Development Needs for Distance Education**

The author, Anne SAYLOR, in this chapter has reviewed the literature regarding the ideas of what college resources are needed to support online learning.

In this connection, the author, focused on the dimensions associated with both faculty and support needed to transform the classroom instructor into an online instructor.

#### **Chapter 16**

##### **Information as a Global Public Good and the Role of Modern Educational Technologies in the Creation of the Information Society**

Deniz SAHIN, as the author of the last chapter of this volume, aims to determine the importance of education which needs to undertake the functions of adapting technological and scientific changes for the creation of information.

The chapter additionally deals with the concept of *Global Public Good* in relation with information society that is addressed from different perspectives.

In conclusion, it is seen that the book covers issues regarding Distance Education Expertise within multiple dimensions and presents an overall view. It is also highlighted in different chapters throughout the book that a successful implementation of distance education requires expertise and this book can be used as a guide to better understand the expertise in distance education.

#### **REFERENCES**

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**LMS TRENDS 2015:  
Is It Time for Something Different?  
A Report by The Brandon Hall**

# LMS Trends 2015: Is It Time for Something Different?

## Industry Perspective



Brandon Hall Group Research Team  
November 2015

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## NOTABLE INSIGHT

***Only 64% of organizations said they were likely to renew their current LMS contract, and 20% confirmed that they will not renew. Perhaps worse, 31% indicated that they would not recommend their current solution to a colleague.***

## Executive Summary

Learning Management System (LMS) solutions continue to underperform across a wide swath of metrics, according to the organizations that use them. The average satisfaction score for any of the 17 aspects of the LMS measured in Brandon Hall Group's latest research never surpasses 3.5 on a 5-point scale. This is not exactly a ringing endorsement of a market estimated to reach \$7.83 billion by 2018.

This dissatisfaction has not changed significantly since 2012. This is especially concerning when you consider that organizations spend an average of 18% of their overall training budget on learning technologies. Only 64% of organizations said they were likely to renew their current LMS contract, and 20% confirmed that they will not renew. Perhaps worse, 31% indicated that they would not recommend their current solution to a colleague.

This leads to a climate of change in the LMS space, where 38% of companies are actively looking to replace their current LMS. Despite flat satisfaction ratings, this number is actually down considerably from the previous study, when 48% of companies were looking to make a switch. However, in the 2014 study, 75% of the companies looking to make a switch said they were going to do so within 12 months, so it is very likely that a majority of them have already switched and are still in early days with their new providers. In aggregate, this represents some pretty aggressive turnover.

**NOTABLE INSIGHT**

*ROI satisfaction scores are on average worse for those companies paying more per user. This quickly dispels any arguments around “you get what you pay for” and paints a picture of something far more systemic.*

There are many reasons that drive organizations to make a wholesale change of their LMS, and some of the top reasons identified in Brandon Hall Group’s 2015 LMS Trends Study include:

- Poor customer support
- Desire to move to the cloud
- Lack of social/collaborative tools
- Difficult to use
- Outdated appearance

For years, learning organizations have been challenged to prove return on investment, or “justify their existence.” It has always been difficult for learning leaders to draw a straight line from their investments in learning to a bump to the bottom line thanks to a wide array of variables. But these demands have only increased over time, and companies clearly do not believe they are getting their money’s worth from their learning platforms. The ability of the LMS to meet ROI expectations scored an average of 2.92 on a 5-point scale. ROI scored more 1s and 2s than 4s and 5s. Essentially, far too many organizations feel they are paying too much for systems that are difficult to use, out of date and do not provide the data and analytics the companies need.

Also consider that these satisfaction scores do not change regardless of what an organization may be paying for their system. Those companies spending more than \$15 per user annually are just as unhappy as those paying less than \$5. In fact, ROI satisfaction scores are on average worse for those companies paying more per user. This quickly dispels any arguments around “you get what you pay for” and paints a picture of something far more systemic.





## NOTABLE INSIGHT

*While the LMS market has been successful over the last 15 years and technology continues to advance, it seems we are hitting a point of diminishing returns.*

When we take a holistic look at learning technology, including what companies are dissatisfied with currently, what they want from future systems and the trends in learning and technology in general, perhaps the solution is not to be found in a newer, better LMS. Perhaps it is time to start thinking outside of the LMS box toward something altogether different.

There are many demographic and cultural shifts occurring that are changing the learning landscape:

- Brandon Hall Group's 70-20-10 Learning Framework research tells us that 57% of learning now involves on-the-job activities and informal learning, while 43% involves formal learning.
- The power and ubiquity of mobile devices grows at an unrelenting pace.
- People are continually finding new and different ways to connect and share thoughts and experiences.
- Millennials, a completely digitally native generation, are poised to take over the workforce.

All of these things are causing organizations to take a serious look at the ways in which they deliver learning. The truth is, for all the features and functions of the modern LMS, it is still a technology rooted in serving a very traditional purpose.

While the LMS market has been successful over the last 15 years and technology continues to advance, it seems we are hitting a point of diminishing returns. Companies are demanding more new features, and ignoring much of the functionality that has been built into the systems in the past. The average satisfaction rating for feature sets has dropped consistently from 3.01 in 2012, to 2.95 in 2014, to 2.82 in 2015. There are changing attitudes about how to approach learning, and the traditional LMS is falling short.

**NOTABLE INSIGHT**

*This may be the point in time where simply switching to another LMS is not the answer.*

*Instead, companies seem to be longing for a different strategy altogether.*

Brandon Hall Group's 2015 LMS Trends Survey indicates that companies are dissatisfied with basically every aspect of the systems they are using and are looking for better options. However, this may be the point in time where simply switching to another LMS is not the answer. Instead, companies seem to be longing for a different strategy altogether.

## Critical Calls to Action

This study – along with LMS Trends studies from previous years, and discussions with learning leaders, technology professionals, and LMS providers – has highlighted some critical calls to action to help organizations rethink their approach to learning technologies.

**Figure 1****4 Learning Technology Critical Calls to Action**

- 1** Use Technology to Support the Learning Strategy, not Dictate it
- 2** Solve Today's Challenges, but Plan for the Future
- 3** Leverage Technology for a Truly Blended Learning Experience
- 4** Realize the Potential in Mobile, Collaborative and Cloud Technologies

Source: Brandon Hall Group 2015



## NOTABLE INSIGHT

*Organizations often are driven to select new technology -- any technology -- to address a specific and immediate set of challenges. That often causes a lack of foresight into the organizational needs beyond the immediate future, which in turn leads to a whole new set of challenges that will need to be addressed.*

## ***1. Use Technology to Support the Learning Strategy, not Dictate it***

Too often, organizations develop a learning strategy, but once the LMS is in place, the features and functionality tend to dictate the way the strategy is executed. Companies may have plans for the way they want to develop their people, but eventually find themselves constrained by the limitations of the LMS. For the 43% of companies that do not have a formal learning strategy to guide them, the influence of the technology is even stronger.

With the resurgence of the 70/20/10 Learning Framework, companies are keen to focus their energy on the 70:20 piece, which involves collaborative/social, experiential on-the-job, and informal learning. In most cases, however, the majority of time and resources is spent on the 10% of learning that is formal. A big reason for this is because the LMS has traditionally been designed to support this type of learning. This disconnect is partly responsible for the poor satisfaction ratings explored later in this report.

## ***2. Solve Today's Challenges, but Plan for the Future***

Organizations often are driven to select new technology – any technology – to address a specific and immediate set of challenges. That often causes a lack of foresight into the organizational needs beyond the immediate future, which in turn leads to a whole new set of challenges that will need to be addressed. We see this over and over again in our LMS research. In fact, the area in which LMS solutions receive the poorest satisfaction rating is the ability to meet future needs, scoring an average of 2.57 on a 5-point scale.

**NOTABLE INSIGHT**

*The top 10 reasons companies want to switch (technology) includes challenges such as a wish to move to the cloud, a lack of social/collaborative features, an outdated appearing system, and – at number one – that the organization's learning needs have changed.*

More than 38% of companies that use an LMS are actively looking to replace their current solution and this failure to plan ahead plays a large role. The top 10 reasons companies want to switch includes challenges such as a wish to move to the cloud, a lack of social/collaborative features, an outdated appearing system, and – at number one – that the organization's learning needs have changed. The fact that an LMS cannot adapt to meet a company's changing learning needs is a clear indication of a poor initial decision.

### ***3. Leverage Technology for a Truly Blended Learning Experience***

Despite being around for the better part of two decades, organizations are just now coming around to the 70:20:10 concept. Organizations need to embrace technology that allows them to focus on the 80% of learning that is not formal classroom or web-based training. And that's not to say that this functionality does not already exist within many of the LMS platforms available. Instead, companies have been obsessively focused on creating courses and filling classrooms that the learning function simply isn't designed to do anything else. The learning strategy itself needs to recognize the existence, strengths and value of informal and experiential learning and technology must be used to execute.

Companies often provide classroom training and web-based training and call it blended. But a truly blended approach involves multiple modalities that can meet the various needs of a diverse learning audience. The technology available today allows organizations not only to provide necessary formal training, but expand and enhance that experience with collaboration, mobility and context. An embrace of a blended environment is the foundation for changing learning from a disconnected event to part of people's everyday work.



## NOTABLE INSIGHT

*Social and collaborative tools within learning technologies allow companies to promote and leverage the 20% of the 70/20/10 model and make collaborative learning easier, more effective and more impactful.*

#### ***4. Realize the Potential of Mobile, Collaborative and Cloud Technologies***

In order to execute on a more expansive learning strategy, new technologies need to be leveraged. There is no doubt that mobile devices are going to continue to play an integral role in how people live, work and learn. The potential for someone to have everything they need to know at their fingertips is a quantum leap forward for performance support. Even in the simplest use, mobile devices provide learners with the opportunity to interact with learning when, where and for as long as they want. The personalization of the mobile device also provides new possibilities for more contextual, relevant learning.

As multiple studies have shown, people learn more, are more engaged and retain knowledge longer, when they are able to collaborate. Schools and universities are embracing this concept even more so than corporations, providing students with both physical and digital spaces to work together and learn from one another. Social and collaborative tools within learning technologies allow companies to promote and leverage the 20% of the 70/20/10 model and make collaborative learning easier, more effective and more impactful.

As for the cloud, companies that are using a cloud or SaaS model for their LMS have higher satisfaction scores than those with installed solutions in every single category we measure. This relates very closely to the call to plan for the future. Organizations that use installed solutions typically find themselves customizing and modifying the solution to meet their needs. While this seems ideal and addresses changing needs, over time the customizations can become cumbersome. When a new version of the platform becomes available, these companies have actually locked themselves into using the older system because an upgrade would undo all the customization. Eventually, they will be stuck using an unsupported version of the software. And while

some organizations may not be able to move to the cloud as easily as others due to security and regulatory concerns, technology providers are addressing these concerns by creating secure cloud models.

## Our Research: 6 Top Findings

This turning point in learning technology is embodied in the key findings, and subsequent analysis, from our research.

**Figure 2** Top Research Findings

- 1** Only about one-third of companies are absolutely sure they will renew with their current LMS provider, and **38% are actively looking to replace their solution.**
- 2** On average, companies are **not overly satisfied** with any aspect of their current LMS solution.
- 3** Perceived deficiencies with learning technology runs far and wide, **including ease of use and vendor support.**
- 4** Companies that spend more per user for their LMS are actually **less satisfied.**
- 5** The longer a system has been in place, the **less satisfied** organizations become.
- 6** Cloud deployments deliver **significantly higher satisfaction ratings.**

Source: 2015 Brandon Hall Group LMS Trends Study, n=283

## *Change is Coming*

As cited earlier, 38% of companies are actively looking to replace their current LMS. Anyone who has been through a technology platform change knows just how big an undertaking this can be. In each of our previous studies, a significant number of companies said they were looking for a replacement solution, peaking in 2012 at 48%. Given that the majority of these changes were slated to occur within 12 months of each survey - that represents some astounding turnover. This means that it is not the same companies saying they want to switch every year but not actually doing it. Rather, the results show that each year, a whole new crop of companies are so dissatisfied that they are looking for new technology.

This dissatisfaction has a direct impact on the LMS providers. Renewals and recommendations are the lifeblood of the market, and providers just aren't doing well enough to earn them. One-fifth of companies said they were not at all likely to renew their provider contract and 31% said they were not at all likely to recommend the vendor to colleagues. Even among those that indicated they might renew and/or recommend, there is clearly a lack of confidence.

**Figure 3** Likelihood to Renew with, or Recommend, Current LMS Provider



Source: 2015 Brandon Hall Group LMS Trends Study (n=283)





## NOTABLE INSIGHT

*The highest satisfaction score was 3.48 for system reliability, meaning the system simply works the way it is supposed to. It goes pretty much downhill from there.*

## What's Going Wrong?

In a nutshell, pretty much everything.

We measured LMS satisfaction across 17 different factors on a scale from 1 to 5, with 5 being the best. The highest score was 3.48 for system reliability, meaning the system simply works the way it is supposed to. It goes pretty much downhill from there.

It's important to understand why organizations are generally not very satisfied with their LMS. To that end, the survey asked companies to rate their satisfaction with their LMS across 17 different factors. The results are astonishingly mediocre. On a scale from 1 to 5, with 5 being the best, the highest score was 3.48 -- and that was for system reliability. System reliability has had the highest satisfaction scores in each of the previous surveys, but for 2015 even this measurement is down from 2014. Simply working when it is supposed to is probably the least a company could ask from its LMS, yet clients are not impressed. Let's take a closer look and see why these results point to a need for something new.



**Figure 4 Rating the LMS**

Factor	1 to 5 Scale	1 to 100 Scale	Traditional Letter Grade
System reliability	3.48	70	C-
Meets our current needs	3.18	64	D
Ease of use by learner	3.15	63	D
Client service support	3.14	63	D
Ease of navigation	3.12	62	D
Implementation execution	3.08	62	D
Technical support	3.07	61	D-
Ease of administration	3.03	61	D-
Training support	2.92	58	F
Met ROI expectations	2.92	58	F
Ease of configuration	2.89	58	F
Feature set	2.82	56	F
Modern look and feel	2.79	56	F
Ease of data migration	2.76	55	F
Reporting and analytics	2.70	54	F
Ease of integration	2.62	52	F
Meets our future needs	2.57	51	F

Source: 2015 Brandon Hall Group LMS Trends Study (n=283)



## NOTABLE INSIGHT

*Meeting future needs scores at the very bottom with 2.57. There is no clearer indication that organizations are desperate for some new technology solutions to execute their future vision for learning.*

## ***Meeting Current/Future Needs***

Perhaps nothing encapsulates the theme of this report than companies' opinions on how well their LMS meets their needs. Meeting current needs ranks second, but only scores 3.18. In other words, LMS platforms are barely doing the job they were designed to do. In the eyes of many organizations, their LMS is already behind the times and unable to execute against their current learning strategy. As companies look ahead to their future learning needs and how they will change, there is basically no confidence that their systems will be able to do what they want. Meeting future needs scores at the very bottom with 2.57. There is no clearer indication that organizations are desperate for some new technology solutions to execute their future vision for learning.

## ***Ease of Use***

Organizations have been complaining about ease of use for years, but the satisfaction scores never go up. For learners it earns a score of 3.13 and for administrators it earns a 3.03. These results point to change because this ease-of-use frustration comes from LMS platforms not behaving in a way that is natural and conducive to how people want to learn. Ease of navigation rates a 3.12, which indicates that companies do not find the platforms intuitive. It is highly likely that the over-packing of features that not everyone wants can lead to these challenges.

## ***Feature Set***

Speaking of features, despite the time and effort providers put into their solutions to include all the bells and whistles they believe customers are looking for, clients either believe there are not enough features, too many features, or just not the right features. This speaks to an



## NOTABLE INSIGHT

*Companies are beginning to see the things they want and/or require from learning technology less as features of an LMS and more as components of a new, more modular approach.*

environment in which the LMS providers are trying to be many things to too many people, but at the same time, the execution is lacking. Companies are beginning to see the things they want and/or require from learning technology less as features of an LMS and more as components of a new, more modular approach.

### ***Modern Look and Feel***

This rating is relatively self-explanatory, and has historically been near the bottom of the satisfaction ratings. Despite saying for years that they want their LMS to look and behave in a modern way, companies still don't think their solutions are there. This might seem like a trivial point, but it feeds into the larger idea that the LMS as a concept might be outdated. In fact, a system that appears outdated is one of the top five reasons companies decide to switch providers. Perhaps an LMS will never have the modern look and feel an organization wants, because the organization wants something completely different.

### ***What's not to Like?***

To get a more general sense of what companies think of their LMS, the survey asked companies to select the three things they liked least about their system. The results are in line with the satisfaction scores seen earlier. Here are the most selected responses:

- Ease of use of the system
- Ability of the system to adapt to changing needs
- Reporting features
- Analytics features to measure return on investment
- Social learning features
- Ability to integrate with other enterprise software
- Quality of customer support provided by the vendor
- Mobile learning features



## NOTABLE INSIGHT

*Even the LMS that is the easiest to use may be too complex for what organizations want to accomplish in learning. Perhaps the answer to the ease-of-use challenge isn't an LMS at all.*

Again, ease of use plays a huge role. Year after year it is in the top three of things least liked. It is not as though the LMS providers have simply ignored calls to make the platforms easier to use. Quite the opposite is true. The vendors have spent vast amounts of time, energy and resources focusing on this very challenge – making what are at its heart a large, complex system with many moving parts easy to use. But maybe that's the problem. Even the LMS that is the easiest to use may be too complex for what organizations want to accomplish in learning. Perhaps the answer to the ease-of-use challenge isn't an LMS at all.

If we look at some of the other things on the list, we start to see a clearer picture that companies may be looking to a post-LMS world. There is concern over a lack of social and mobile learning features. In many cases, the providers have fumbled their way through the advent of these technologies. Vendors will add a chat feature to the platform and call it social learning. Others say their system is mobile friendly, but the platform is not responsive to different device types. Organizations are looking for solutions that embrace these concepts because they are the technological embodiment of how people learn.

These dislikes could be written off as annoyances that can be addressed, but they have real impact. Many of them appear on the list of reasons why that 38% of companies is actively looking for a new solution. Here are the top reasons for switching:

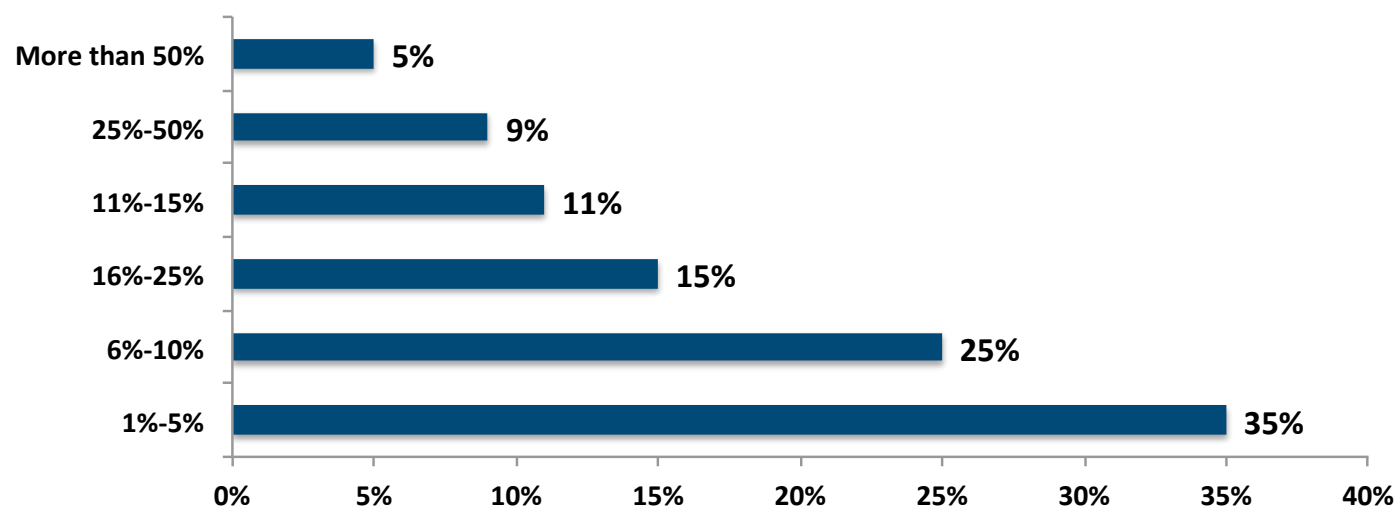
- Poor support from vendor
- Wish to move from installed system to the Cloud
- Platform lacks the social learning features we need
- System is difficult to use
- System appears outdated
- Inability to integrate with other enterprise software
- Our learning needs have changed

The same themes we saw earlier continue. Almost everything points to the future: A move to the cloud, social learning, modern looking systems, changing needs.

## *Money Can't Buy Happiness*

Often the first reaction to poor satisfaction scores with any technology is the old adage, “you get what you pay for.” The learning budget is constantly under scrutiny. According to a Brandon Hall Group/Starr Conspiracy Study, 44% of companies cite “not enough budget” as a top learning management technology challenge, making it the number one hurdle. As seen in Figure 5 below, there is only so much of the already constrained learning budget that is allocated to the LMS.

**Figure 5** LMS Budget as a Percentage of Learning Budget



Source: 2015 Brandon Hall Group LMS Trends Study (n=283)

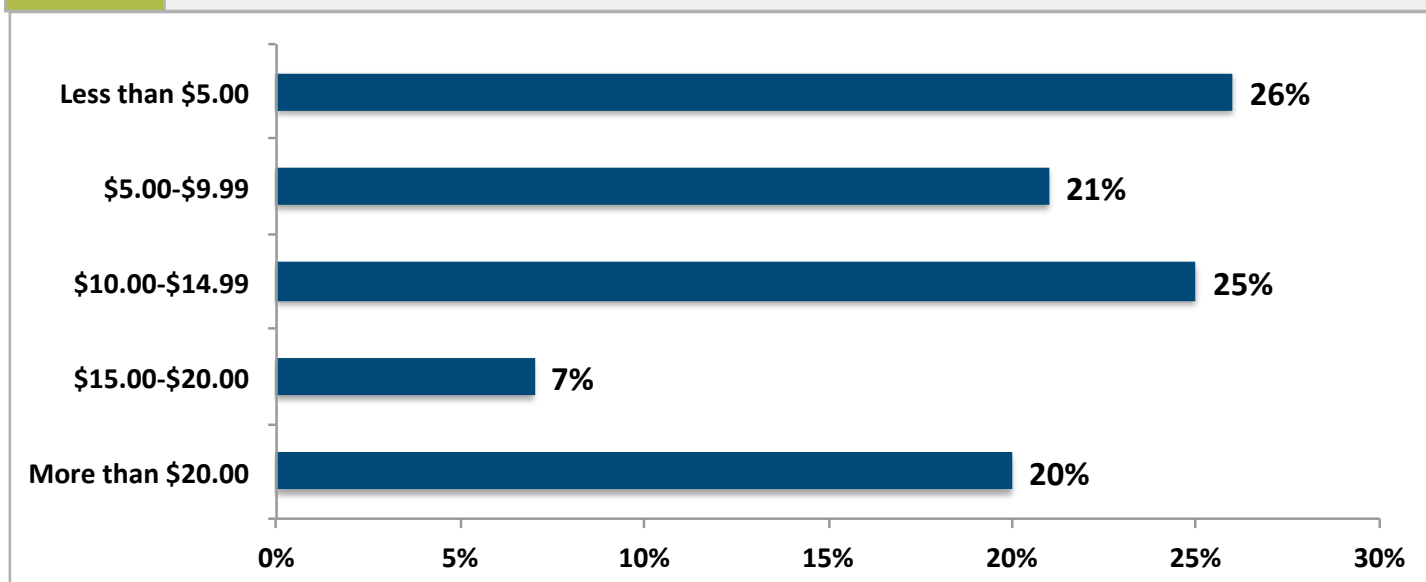
At the same time, ROI is always challenging with learning. Referring back to the satisfaction scores discussed earlier, the ability of the LMS to meet ROI expectations rated a rather poor 2.92. In this kind of environment, it would be easy to assume that organizations are simply going for the cheapest solution

and suffering buyer's remorse down the road.

However, for companies looking for a new system, cost is fifth on a list of influential factors. Organizations are more concerned with getting a system that is easy to use, can adapt to changing needs, and can provide personalized learning experiences. Also, the study looked at the amount companies are spending per learner annually on their LMS to see if that had an impact on satisfaction.

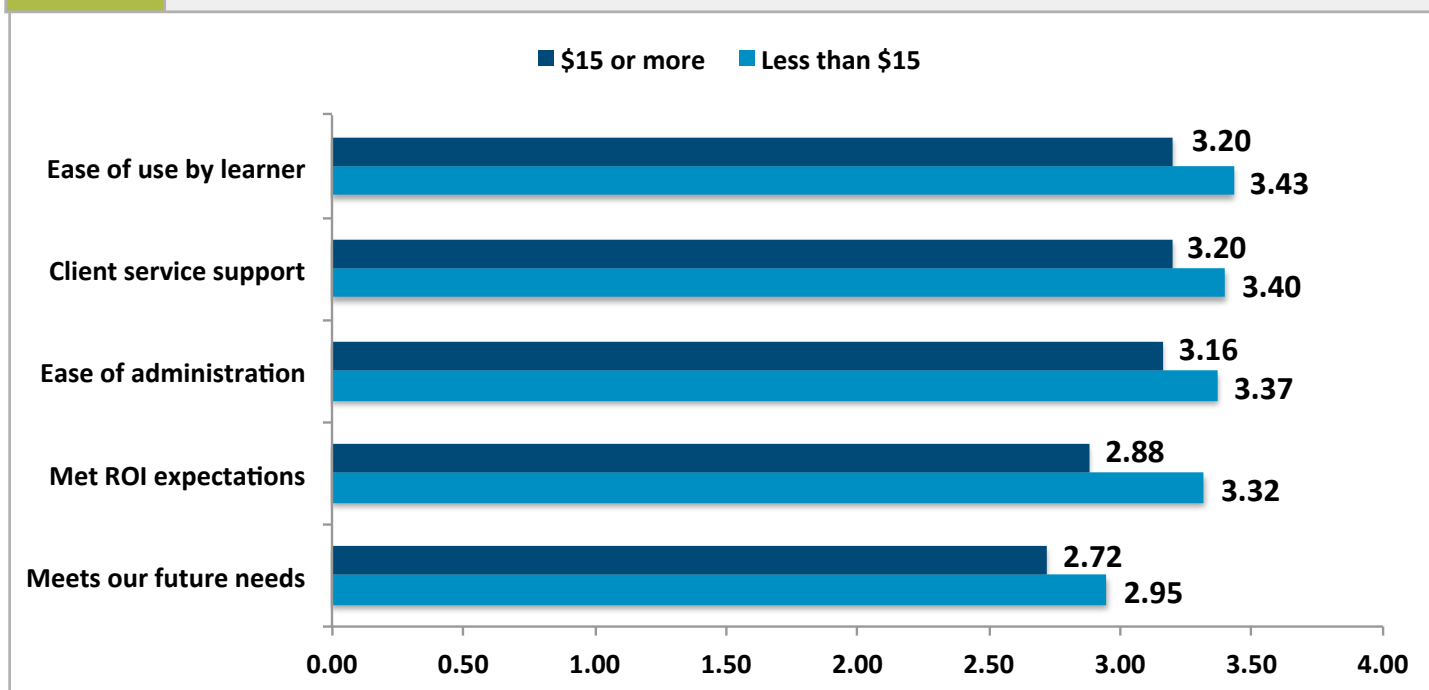
**Figure 6**

**Average Cost per User**



Source: 2015 Brandon Hall Group LMS Trends Study (n=283)

It turns out that there are only a couple of places where the more expensive systems score better than their more economical counterparts. The first is with reporting and analytics. Those companies spending \$15 or more per learner gave their systems an average score of 3.08, versus 2.83 for those spending less. The companies spending more also feel they are getting better training support from their vendor, scoring 3.28 vs. 3.05 for the less expensive systems. On the other hand, the less expensive systems outperform the pricier options in multiple categories.

**Figure 7 LMS Satisfaction Ratings by Cost per User**


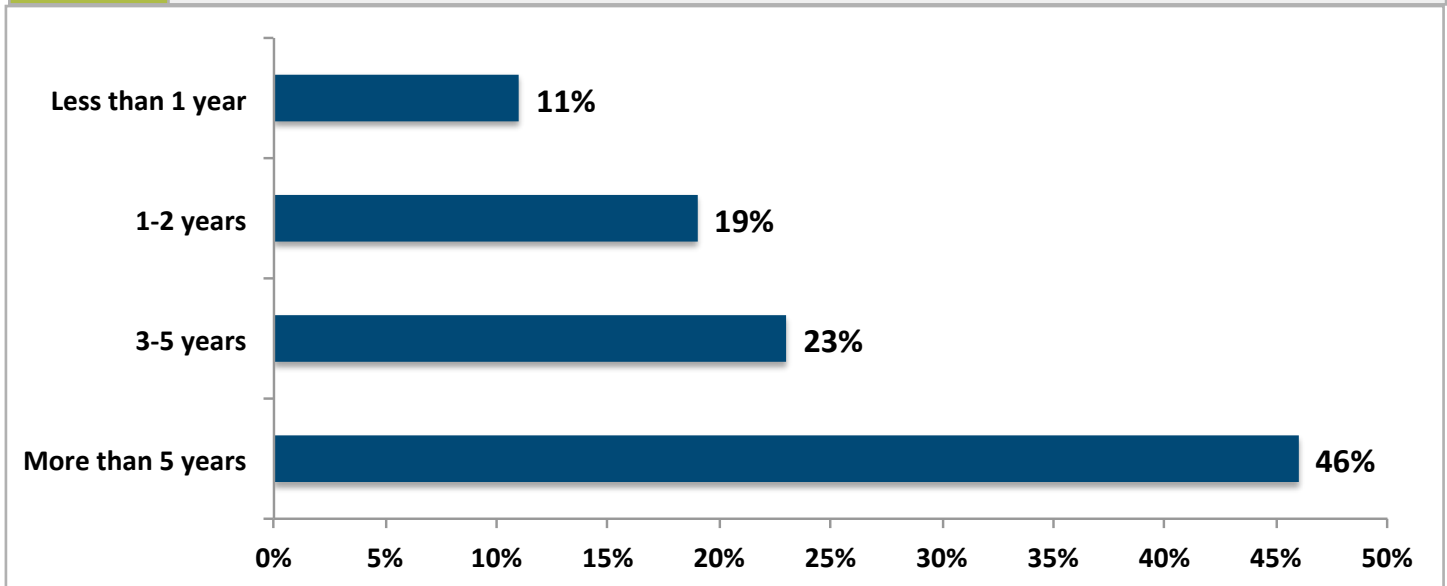
Source: 2015 Brandon Hall Group LMS Trends Study (n=283)

Companies spending less per learner find their systems easier to use for both learners and administrators, and they say they get better support overall. Perhaps more telling, though, is that they say they are getting both a better ROI as well as a system that is better able to carry learning into the future.

### ***Time is Not on Your Side***

An LMS implementation is no small feat. A company putting a platform into place would expect to be using that platform for at least a few years. In fact, 60% of companies have contract terms of three years or more. The hope is that any issues an organization may face in the first year or so will get ironed out as time goes by, making for a more satisfactory LMS experience. Nearly half of existing implementations (46%) are more than five years old.

**Figure 8** Age of System Deployment

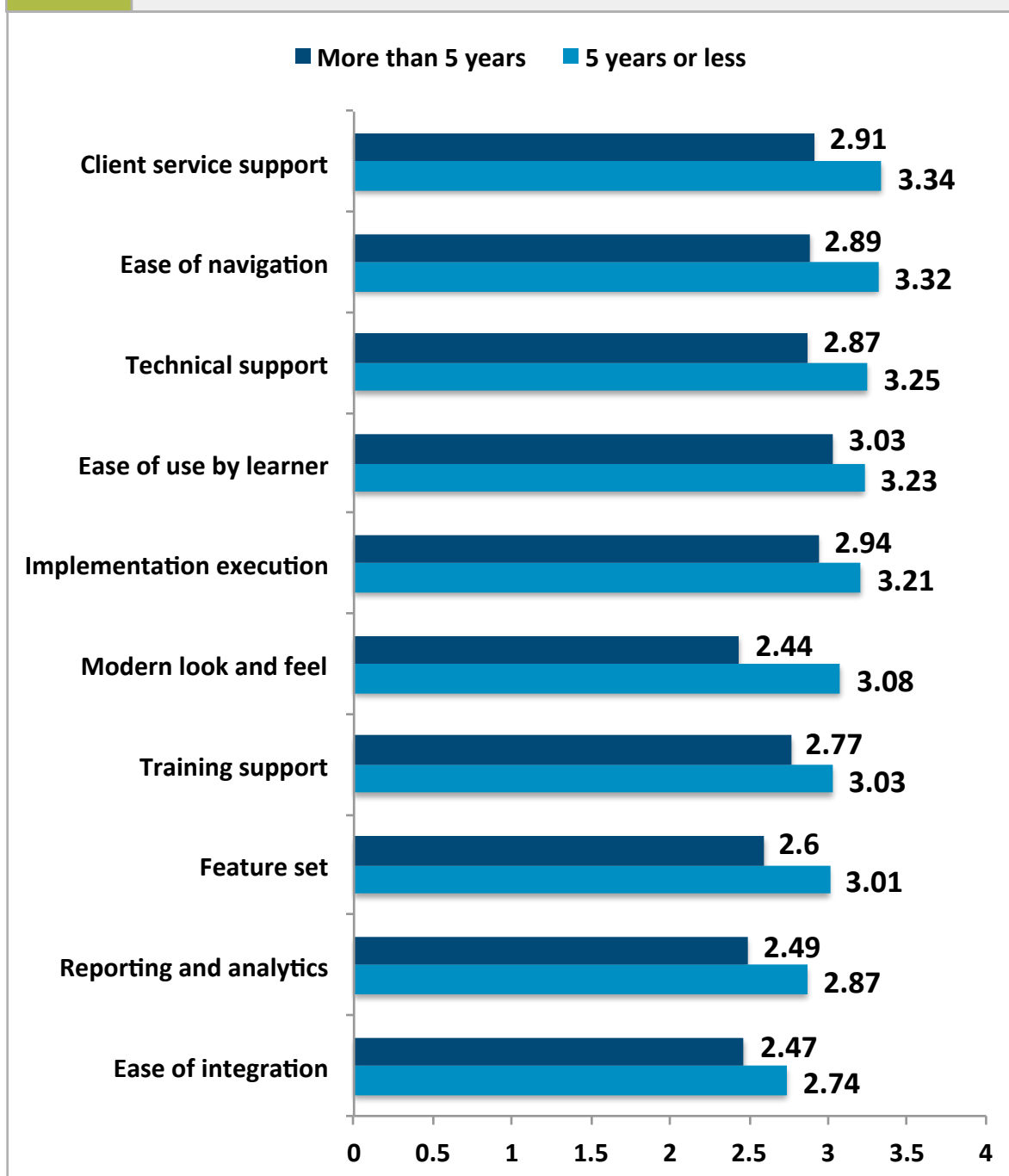


Source: 2015 Brandon Hall Group LMS Trends Study (n=283)

It turns out that experience with a particular platform does not translate to higher satisfaction. In fact, the only area in which older systems do better is in system reliability, where they score an average of 3.63 compared to 3.36 for newer implementations. Beyond that, however, the more recent deployments outperform the older ones in every area and in many cases by a significant margin.



**Figure 9** LMS Satisfaction Ratings by Length of Deployment



Source: 2015 Brandon Hall Group LMS Trends Study (n=283)

Unsurprisingly, those systems in place for five years or less scored far better for a modern look and feel (3.02) than those that have been in place longer (2.67). Five years is an eternity

**NOTABLE INSIGHT**

*Providers are making incremental improvements toward what organizations are looking for, but aren't really getting there. ... It's like jumping halfway to the goal line over and over. No matter how many jumps are taken, you will never get there.*

in technology and the older implementations just can't seem to keep up. Interestingly, the newer systems even outperform when it comes to ease of navigation. After five years, learners should know their way around the system pretty well, yet the newer systems do better here and in ease of use.

One way to look at this is that organizations that made a technology selection one year ago is getting all the latest bells and whistles compared to a company purchasing a solution seven years ago. But that assumes the vendors are static with their solutions and never update them. We know this is not the case. Patches, updates and upgrades continually flow from the vendors and, aside from a few stubborn installed clients who won't update, everyone should be working with the same types of technology.

Instead, the indication here is that whatever challenges an organization is facing early on, the vast majority of them will not improve over time and many may even get worse. This could lead to companies pushing for shorter and shorter contract terms so they are not saddled with a clunky, hard-to-use system five years down the road. As part of the broader picture, it shows that providers are making incremental improvements toward what organizations are looking for, but aren't really getting there. Again, the challenge may be that any and all of these improvements are occurring within the defined space of what an LMS is; and perhaps an LMS is not the answer. It's like jumping halfway to the goal line over and over. No matter how many jumps are taken, they will never get there.

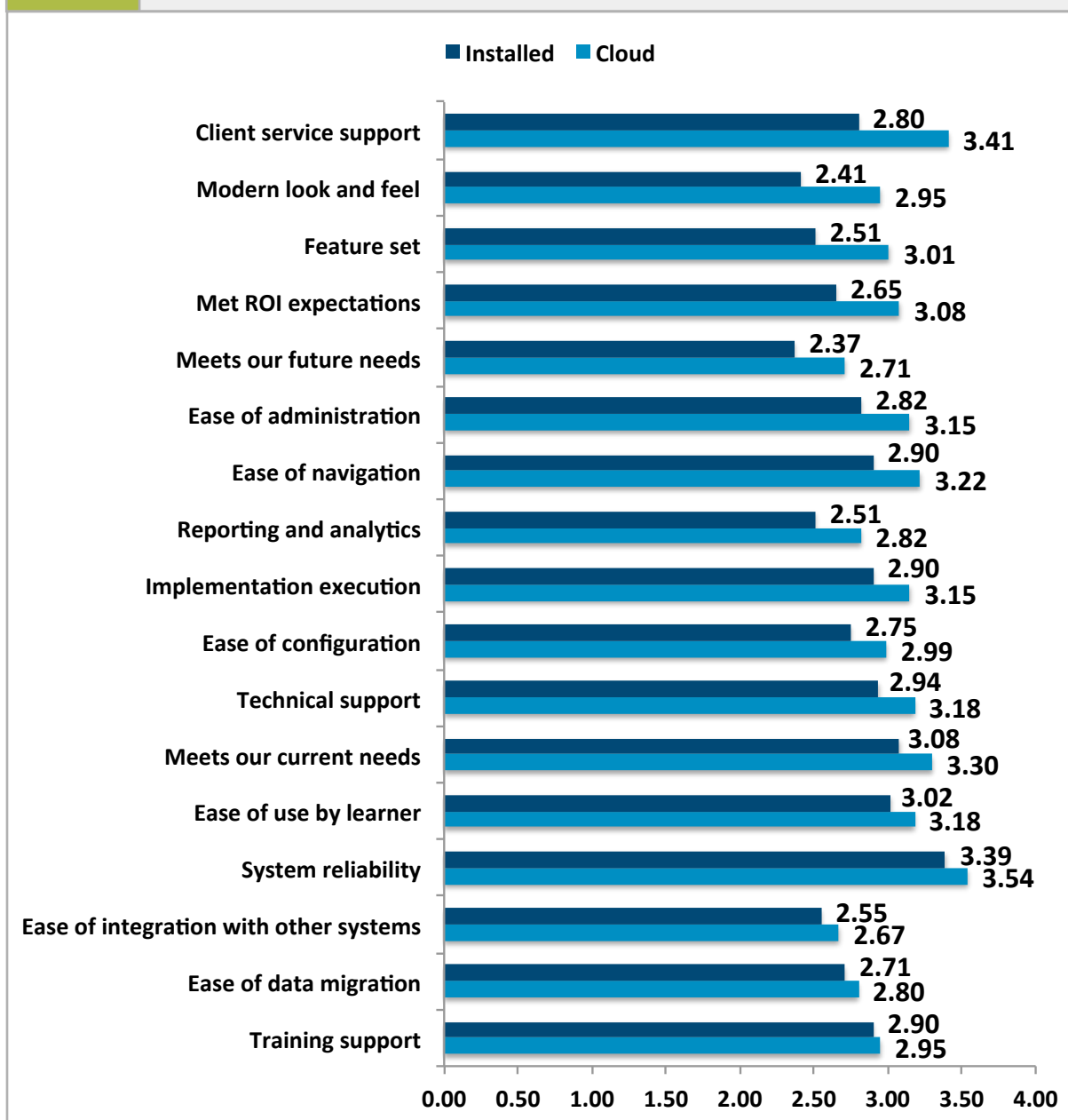
### ***Is the Answer in the Cloud?***

As referenced earlier, many organizations have their LMS installed on their own servers. In fact, nearly one-third of organizations have their LMS installed behind the firewall. This number has dropped over the years as companies become more comfortable with running software as a service in the cloud, but there are still many organizations that won't or simply can't

move to the cloud.

To hear software companies tell it, the cloud is the answer to all of your problems. According to the survey, they may just be on to something. Companies that have their LMS deployed in the cloud give higher satisfaction scores across the board than those with installed solutions and in most cases it is not even close.

**Figure 10** LMS Satisfaction Ratings by Type of Deployment



Source: 2015 Brandon Hall Group LMS Trends Study (n=283)

One of the main reasons companies install solutions is so they have complete autonomy over the infrastructure to ensure the system operates reliably. Yet, cloud systems actually get higher satisfaction rates in this area. Some of the biggest satisfaction gaps between installed and cloud solutions include:

- **Client Service Support.** Since installed solutions rely more on internal resources for support, it is unsurprising that they give much lower marks to their vendors for client support. More than one-third (36%) of companies with installed solutions say their system requires high or very high IT involvement, compared to 17% for those with cloud solutions.
- **Modern Look and Feel.** Cloud-based solutions are a relatively new concept in the LMS market, so the likelihood that these systems are more modern looking than installed solutions makes sense. These systems are also much easier to update and upgrade, so clients are always running the latest version. There are installed clients who might be running anywhere from one to three versions behind, if not more.
- **Feature Set.** Similar to modern look and feel, cloud-based customers are assured they will always have the latest and greatest the system has to offer. New features are easier to deploy and they roll out more frequently than they do to an installed base.
- **Met ROI Expectations.** This is an area, similar to system reliability, where one would expect the installed base to do better. Installed customers are generally paying less per user than the cloud customers, so ROI should theoretically be easier to achieve. However, given all of the other shortcomings with the installed solutions, it becomes clearer as to why cloud solutions do better here.

## Learning Technology Leading Practices

Based on our years of research in this area, as well as countless technology selection engagements with companies of all sizes and industries, we have identified a list of learning technology leading practices.

### EXISTING SYSTEMS

Make sure you are taking full advantage of the features and functions of your current solution. ☒

Work with your vendor to develop a road map for future needs. ☐

An LMS is not the only learning technology solution. There are many other tools that work in conjunction with an LMS to greatly expand functionality, including LCMS, LRS, authoring tools, gamification platforms, and social and collaborative tools. ☐

Re-examine your reporting and analytics. Are you really getting the data you need and are you making the most use of the data available? ☐

### NEW SYSTEMS

Prioritize your organization's technology requirements based on the learning strategy and its relation to the overall business strategy. ☒

Use challenges with previous systems as use cases for new systems. Developing use cases ensures a new platform can meet your organization's specific needs. ☐

Demos should be scripted by your organization, not the vendor. Vendors know how to demo their products to put them in the best light. You want to see how they perform against your requirements and use cases. ☐

Do not get caught up in cost, which typically dominates the decision process. Be sure to take into consideration things such as global needs, installed vs. cloud, data migration, customization and other items that can effect cost outside of the per user price. ☐

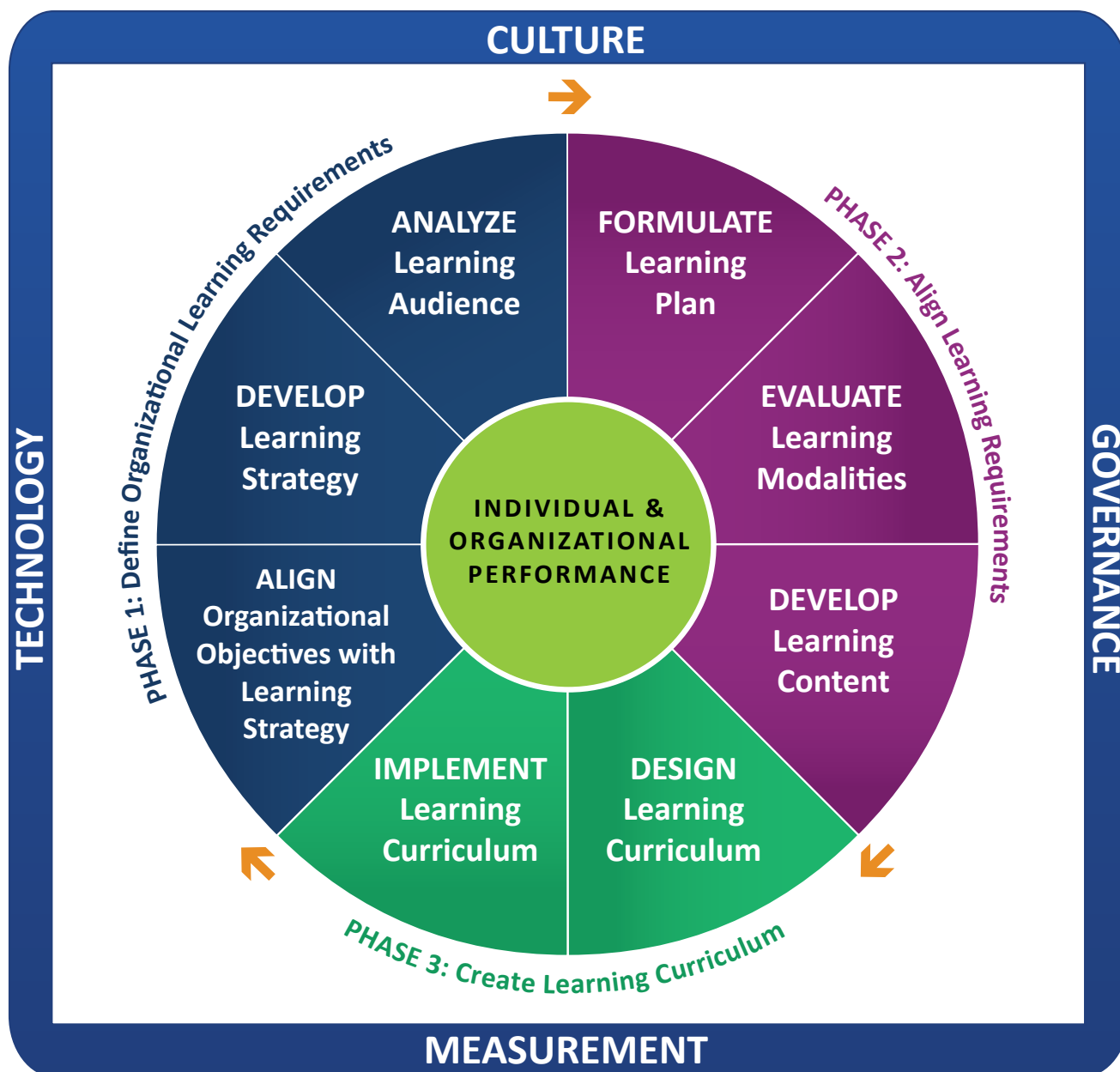
Sources: 2015 Brandon Hall Group

To plan for future technology selections, you can use this selection worksheet available in the [Brandon Hall Group Member Center](#). We have also included it as an Appendix to this report.

## **The High Performance Learning & Development Framework**

It is imperative to get the technology piece of Learning and Development right, as it is often the means by which the entire strategy is executed. All the due diligence, care and effort put into developing a learning strategy can be undone by technology that cannot execute that vision. A look at Brandon Hall Group's Learning and Development Framework (next page) shows the pivotal role technology plays.

Figure 11 High-Performance Learning and Development Framework



**PERFORMANCE ANALYTICS AND REPORTING & ORGANIZATIONAL LEARNING OBJECTIVES**

External Influencers	Strategic Alignment	Stakeholder Experience	Executive /BU Engagement	Talent Needs	Relationship Centered Learning	Relevant & Accessible	Global & Agile	Scalable	Multi-Modal (Social, Mobile, Gaming, etc.)
S U C C E S S L E V E R S									

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## NOTABLE INSIGHT

*There is a wide variety of learning technology solutions available to meet any need an organization may have. While some companies may only need one, others use multiple solutions and platforms to aid in the development, delivery and measurement of learning.*

## Technology as Part of the Contextual Frame of L&D

Technology is a large piece of the learning puzzle for any organization, whether it is developed in-house or comes from third-party providers. In fact, learning technology represents about 28% of the average overall learning budget, more than anything except for internal headcount. There is a wide variety of learning technology solutions available to meet any need an organization may have. While some companies may only need one, others use multiple solutions and platforms to aid in the development, delivery and measurement of learning. Besides the LMS, which we have already explored in depth, here are some of the technology solutions that can meet specific needs:

- **Learning Content Management System (LCMS).** While companies may have resources to acquire and create content, and perhaps an LMS to deliver the content, managing the content once it exists is an entirely different matter. Organizations often build their own tools on a content management platform like SharePoint. But these types of solutions aren't designed specifically to meet the unique needs of the learning environment. About 61% of companies use an LCMS and one-quarter of them use a system they developed in-house. A true LMS, however, provides organizations with a means to not only create learning content, but manage it in ways that are more flexible and user-friendly than the typical content management system.
- **Content Authoring.** While there are resources out there for generic learning content that can apply to almost any organization, just about every company has a need for content specific to their business and how they do it. There are vendors that can build that content for them, but often organizations choose to create the content themselves. In fact, 89% of companies use at least one of the myriad authoring tools



available. These tools allow users to create almost anything: enhanced PowerPoint presentations, click-through storyboards, videos, games, simulations and more. Two-thirds of companies employ two or more tools, and two-thirds of large companies (more than 10,000 employees) use three or more tools. While most LCMS platforms have content authoring features, many organizations look for other providers in the authoring space.

- **Social/Collaborative Tools.** According to Brandon Hall Group's 2014 Social & Collaborative Learning Study, 61% of companies say that their employees need to connect with learning resources either weekly or daily to be effective at their job. In an environment that focuses heavily on formal learning, that can be nearly impossible. Despite the research behind the 70/20/10 learning model, which indicates only 10% of organizational learning takes place in a formal setting, companies spend a huge amount of their time and resources on formal learning content and tools. There is clearly a seismic shift underway, however. Brandon Hall Group's research into the 70/20/10 model found that 43% of learning takes place in a formal setting, with the rest being informal and on the job.

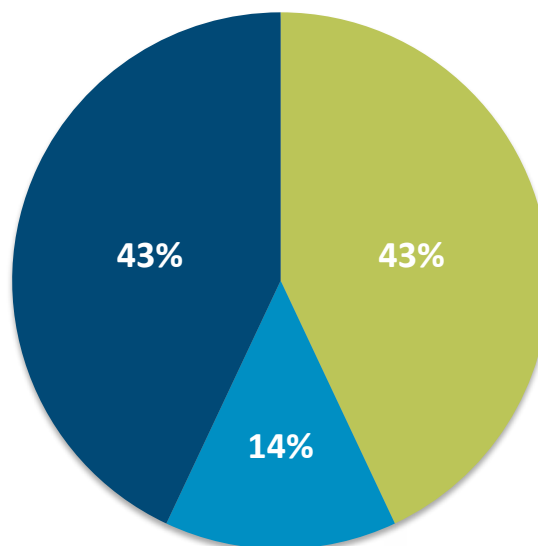


## NOTABLE INSIGHT

*We now see learning environments complete with blogs, shared media, discussion boards, and multiple communication tools designed to keep learners connected to learning and to each other.*

**Figure 12** Formal vs. Informal Learning

■ Formal learning ■ Informal learning ■ On-the-job activities



Source: 2014 Brandon Hall Group 70/20/10 Framework Study (n=248)

Less than half of the learning going on within organizations is now formal. While not near the 10% of the official model, it is a far cry from just a few years ago, when it was more difficult to create, deliver and manage informal learning.

A wealth of social and collaborative tools allows companies to facilitate and encourage the type of informal and on-the-job learning that was previously taking place simply by chance. We now see learning environments complete with blogs, shared media, discussion boards, and multiple communication tools designed to keep learners connected to learning and to each other. Social and collaborative learning is all about the wisdom of the crowds. Here are some of the most effective tools:

- **Discussion forums.** Learners are able to ask each other questions about courses, content, or just about how things get done. While this activity may have previously taken place in a hallway or a break room, now everyone can contribute and benefit simultaneously.

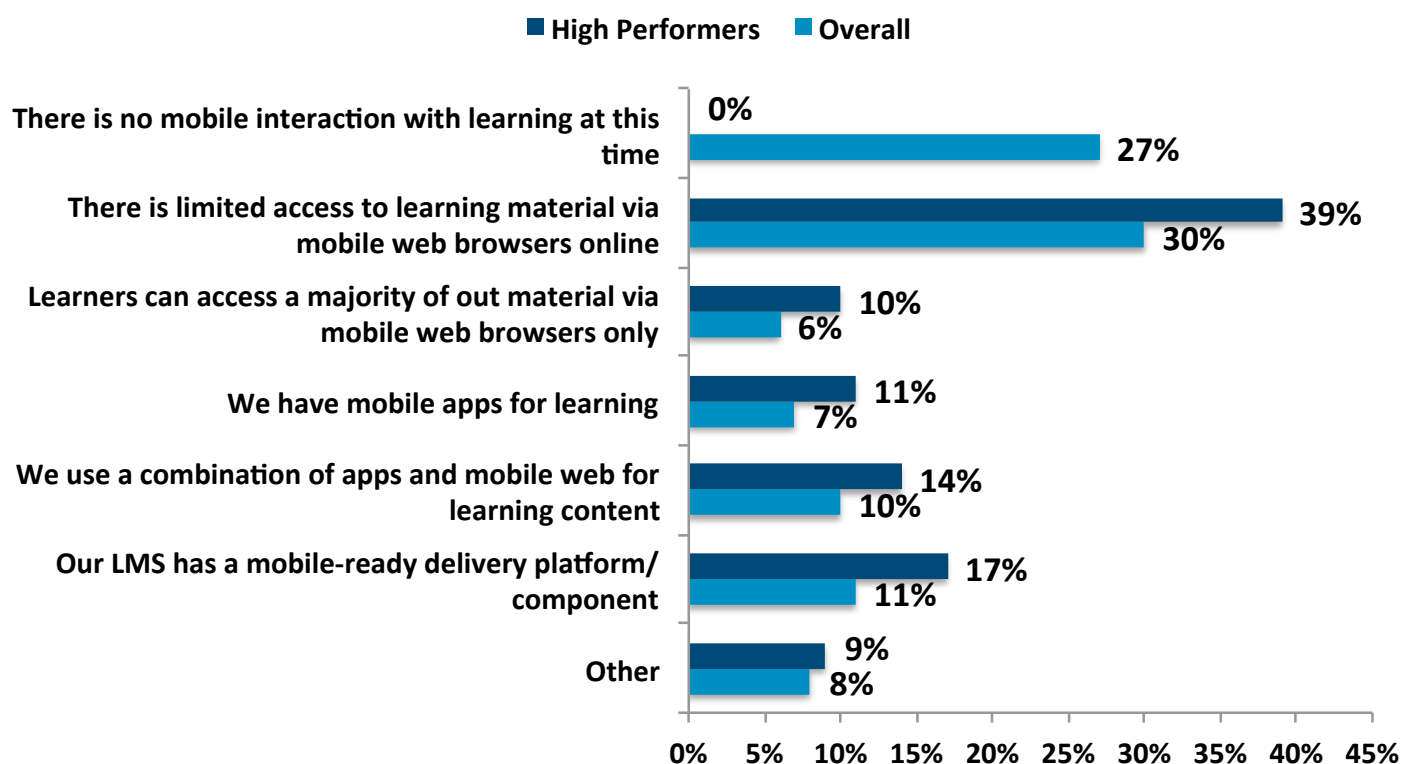


## NOTABLE INSIGHT

*Video provides a platform for learners to share their successes and best practices in a medium that is easy to access and understand. This particularly appeals to Millennials, who will soon comprise the majority of the workforce.*

- **Learner comments.** Allowing learners to comment on courses, content and curricula provides the kind of context that was previously unavailable. People like to hear what their peers have to say on a subject and value those opinions. Comments also give great insight into the quality of the material.
- **Expert directory.** Having a resource that enables people to find experts is invaluable. A directory that includes the expertise of its members means that people can quickly find the people who know the answers without spending time hunting someone down.
- **Learner-generated video.** Video is always considered one of the more effective learning tools, and having learners create their own how-to videos adds a new level to that. It provides a platform for learners to share their successes and best practices in a medium that is easy to access and understand. This particularly appeals to Millennials, who will soon comprise the majority of the workforce.
- **Mobile Delivery Tools.** In an increasingly mobile world, it is imperative that organizations figure out what role mobile learning plays in their overall learning strategy. The answer is not simply allowing access via mobile devices. The depth and complexity of the mobile strategy depends greatly on organizational goals, learning objectives, and audience preferences. Despite the ubiquity of mobile devices and the potential they have for learning, we are still in the early stages of mobile learning.

Our Mobile Learning Survey found that 27% of organizations report there is absolutely no mobile interaction with learning. And among those companies that have delved into mobile learning, only about 58% are doing anything beyond limited mobile web access. What is telling, however, is that among high-performing organizations, not one single company indicated they hadn't begun at least exploring mobile learning.

**Figure 13**
**Mobile Learning Maturity**


Source: Brandon Hall Group Mobile Learning Study

As for the direction mobile learning is headed, there are a few common characteristics to effective mobile strategies:

- **BYOD.** Companies used to issue devices like Blackberries to employees to maintain control of the technology. However, we have moved into more of a bring-your-own device (BYOD) environment, where some people prefer an iPhone, others an Android, and still others a tablet. A mobile learning strategy that is married to one platform may address a specific issue or two, but cannot grow and adapt with the workforce.
- **Responsive design.** Because of the BYOD shift, the design of mobile content needs to be responsive. In other words, build it once and have its display behave properly on just about any device. As more designers move away from Flash and use of HTML5 becomes more common, this becomes less of

an issue. The goal is to provide a seamless experience for users on any device, mobile or otherwise.

- **Smaller bites.** Just like the screen is smaller, so too should be the content. Learners do not want 60-minute videos or decks with 45 slides in them on their mobile device. Mobile learning is different from traditional methods and should be handled as such. Shorter, smaller, just-in-time learning for those moments of need are the most effective.

## Conclusion

The Brandon Hall Group/Starr Conspiracy study found that organizations believe the following to be the greatest opportunities facing learning management technology:

- Informal and continuous learning
- Social/collaborative technologies
- Integration with other talent technologies
- Mobile technologies

These are all areas where the LMS is currently struggling mightily. But maybe it is not the job of the LMS to meet these and other challenges. It may be time for a new learning technology paradigm to rise and turn the learning ecosystem on its ear.

Even the developers of the mighty SCORM standard – which is heavily responsible for how learning management systems behave – have seen the light and continue to develop xAPI, also known as the Tin Can API. This new standard is designed specifically to shatter the box that SCORM had built around learning content and open the environment to just about any learning experience imaginable. And that's the point. We recognize the realities of how people learn. Our own research into the 70/20/10 framework shows that companies recognize that the majority of learning takes place outside of formal channels.

The LMS, despite all of its advances over the years, is built around a traditional model in an environment that is clearly poised to change.

## Research Methodology

The online survey was conducted in the second quarter of 2015, and garnered a total of 283 responses from a wide variety of industries and company sizes. The survey included 37 questions, including demographic questions. Respondents were almost evenly split between small, mid-sized and large organizations, as shown in Figure 1. The survey was supplemented with interviews with selected respondents who agreed to be contacted (See next page for further methodology details).

## Authors and Publication Team

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# Brandon Hall Group's Research Methodology



## Client-Centered Business Goals



### Evaluation of Business and Talent Landscape

We study current trends to hypothesize about how they might influence future events and what effect those events is likely to have on your business.



### Quantitative Surveys

To test our hypothesis, we gather empirical insights through formal and informal surveys completed by Executives, Chief Human Resources Officers, VPs of Talent and other business leaders as well as HR, Learning and Talent Leaders and employees.

### Qualitative Interviews

To check assumptions generated from surveys and to add context to the empirical survey data, we talk to Executives, Chief HR Officers, VPs of Talent and other business leaders as well as HR, Learning and Talent Leaders and employees.



### Analytics-Based Reports and Tools

After verifying our position internally, in alignment with scholarly research, and the market and completing rigorous peer reviews, our position is documented and published, made available to our members, in the form of reports, tools and online searchable databases.



### Market Testing

We fortify and validate our initial findings, leading practices and high impact processes within the analyst environment, our own Advisory Board and select other clients and prospects that offer fair assessment of the practicality and usability of our findings, practices, and processes. Again we add new perspectives as appropriate before readying the research for publication.

### Emergent Trends

After studying and analyzing all collected data, we see and document patterns emerging within high performing companies. We create initial drafts of our findings, leading practices and high impact processes.



### Expert Resident Knowledge

Our quantitative and qualitative findings are shared within our internal research community and rapidly debated in peer review sessions to test validity and practicality.

### Scholarly Reviews

We study and analyze renowned academic research comparing and contrasting their findings to our own and again engage in rapid debate to ensure our findings and analysis stand the tests of business usability. New perspectives are shaped and added as appropriate.



## Appendix

### Technology Selection Tool

#### Directions for Filling out Document

This form is an upfront tool to help you identify the most critical requirements for your Learning Management System selection process. Please consider the individual answers to each question and your priority settings carefully. If everything is listed as important, it will be difficult to select the correct system.

This document can be filled out as a team or by forwarding this document to individuals who continually add comments or make changes to the sections within their expertise areas. Furthermore, you may have each individual fill out a document and have a team-member aggregate a final document.

#### STEP ONE

Please complete the alignment questions on the next page by filling in the Commentary column with as much written detail as possible.

#### STEP TWO

Complete each applicable Requirements page. Rank each element based on its initial priority to your organization. Using the third column, choose the stakeholder who is driving the requirement.

Only "High Priority" items are deal breakers. They will disqualify a system from the selection process – so select these carefully. These will also be the primary discussion topics during your on-site session. You may also capture notes on specific requirements in the NOTES column.



## Alignment Questions

#	Alignment Questions - Fill in the Blank Questions	Status	Commentary
1	Identify at least three business goals that will be supported through the LMS implementation?		
2	Provide a range of total annual expected system users that are expected to use the system over the next 3 to 5 years?		
3	Identify the range of total number of expected annual system administrators who are expected to use the system over the next 3 to 5 years?		
4	Identify the range of total number of internal employees who will need to access the system annually over the next 3 to 5 years?		
5	Identify the range of total number of external contract employees (clients/contractors/channel partners) expected to annually use the system?		
6	Identify the range of total external users (clients/channel partners/ or others) who will be expected to use this system annually?		
7	Identify the most likely locations end-users will access the system (desk-top, laptop, kiosk, mobile phone, etc)?		
8	Identify the number of departmentally maintained learning portals with different business needs (requiring multiple domains)?		
9	The vertical industry your end-users will most likely aligning with?		
10	Identify required languages needed for the end-user system? Please list		
11	Identify required languages needed for the administrative users? Please list		
12	Average date your organization would like to see the implementation efforts completed?		
13	Identify the 1 year budget range you want to work within?		
14	Identify the 3 year budget range you want to work within?		
#	Alignment Questions - Yes or No	Status	Commentary
15	Do you have the resources and want to locally install an LMS solution?		
16	Do you plan on internally creating at least 80 hours (seat time) of e-learning content across the entire enterprise each year?		
17	Are you already using, or have plans to use, e-learning content from third-party e-learning providers (such as SkillSoft, Open Sesame, etc.)?		
18	In addition to e-learning, do you have plans to manage classroom instruction (registration, tracking, etc.) through a central scheduling system?		
19	Do you currently have enterprise competency models and are they used in support of learning in your organization?		
20	Do you have a mandate to perform regulatory or compliance tracking of enterprise learning?		
21	Do you have plans to track knowledge as well as learning objects?		
22	Do you plan to use this system as a primary method for human capital management (conducting performance reviews, using for hiring decisions, etc.)?		
23	Do you hope to facilitate collaborative interaction among learners?		
24	Do you have plans to use live, virtual classroom as part of your learning strategy?		
25	In order for the project to be successful, is it necessary for the learning system to communicate with central employee records found in an ERP system (e.g., PeopleSoft, SAP, Lawson, etc.)?		
26	Is it part of your plan to charge for consumption of learning material, either through e-commerce transactions (such as a credit card purchase), subscription pricing, or through departmental charge-backs?		
27	Do you need to deliver training to some people who may be offline - not connected to the central system?		
28	Have you obtained all key stakeholders buy for the LMS selection and purchase?		

## 1. Technical Systems Requirements

#	Technical System Requirements	Priority	Stakeholder Alignment	NOTES
<b>Delivery Models Required</b>				
1	The ability to be installed behind our company firewall			
2	The ability to be delivered in SaaS (True Multi-Tenant) format			
3	The ability to be delivered via Third party hosting (Single-Tenant Hosting)			
<b>Technical Support Services Required</b>				
4	Offers end user (learner) phone-based technical support			
5	Offers end-user (learner) e-mail based technical support			
<b>Prioritize Supported Server Platforms</b>				
6	Windows 2000			
7	Windows NT			
8	Windows XP			
9	UNIX			
10	Sun Solaris			
11	IBM AIX			
12	LINUX			
13	HP-UX			
14	Apple			
	Other (please List)			
<b>Prioritize Supported Databases</b>				
15	Oracle			
16	Microsoft SQL			
17	IBM DB2			
18	Access			
19	MySQL			
20	Other (please List)			
<b>Prioritize Technology and Code Requirements</b>				
21	NET			
22	.ASP			
23	J2E			
24	Server-side JavaScript			
25	Other (please List)			
<b>Prioritize System Integration Requirements</b>				
26	Batch process loading of data from ERP's, CRM's, etc.			
27	Real-time data synchronization from ERPs, CRM's, etc.			
28	Actual shared databases with businesses data			
29	Other (please List)			
<b>Prioritize Specific System Integrations</b>				
30	Oracle EBS			
31	Oracle/PeopleSoft			
32	SAP			
33	Lawson			
34	Halogen			
35	Ultimate			
36	ADP			
37	Accero			
38	SilkRoad			
39	Workday			
40	Other (please List)			
<b>Prioritize General Technical Requirements</b>				
41	Ability to be able to migrate data out of and into the system			
42	Ability of the system to scale with growth			
43	The pre-go live testing process			
44	The reliability (i.e. up-time statistics) of the system			
45	The ability to handle heavy loads of concurrent users			
46	Other (please List)			

## 2. Standards and Integration Requirements

#	Standards and Integration Requirements	Priority	Stakeholder Alignment	NOTES
	<b>Standards</b>			
1	AICC Compliant			
2	SCORM 2004			
3	SCORM 1.2			
4	SCORM 1.1			
5	SCORM 1.0			
6	Section 508 Compliance			
7	Section 508 tested with JAWS reader			
8	Section 508 tested with Bobby			
9	Section 508 tested with LYNX			
10	21 CFR part 4 compliant			
11	Others please list			
	<b>Available Content Libraries offered in the system or tested in the system</b>			
12	SkillSoft			
13	ElementK			
14	MindLeaders/ThirdForce			
15	Others please list			
	<b>Priority of 3rd Party Desk Top Authoring tools that have been tested for interoperability within the system</b>			
16	Flash			
17	Dreamweaver			
18	LectoraPublisher			
19	Articulate			
20	Captivate			
21	Camtasia			
22	FlyPaper			
23	Others please list			
	<b>Priority of 3rd Party LCM's or Content Management systems tested for interoperability with the system</b>			
24	Outstart			
25	Xyleme			
26	SharePoint			
27	Others please list			
	<b>Priority of 3rd Party Video Conferencing tools tested for use with the system</b>			
28	Cisco Webex			
29	GoToMeeting			
30	MicroSoft Live Meeting			
31	Adobe Connect Pro			
32	Infinite Conferencing			
33	Intercall			
34	Others please List			

### 3. Learning, Administration, and Domain Requirements

#	Learning, Administration, and Domain Requirements	Priority	Stakeholder Alignment	NOTES
	<b>Local Content Requirements</b>			
1	The need to launch and track CD-ROM, DVD, or other locally stored content			
	<b>Learning Environment Features</b>			
2	Secure logon with valid authentication			
3	Advanced search capabilities (keywords, delivery, format, etc.)			
4	Creation of unique individual learning plans based on need gap analysis			
5	Creation of unique individual learning plans based on job roles, positions, or functions			
6	Support for multiple learning catalogs			
7	Support for multiple delivery mode asset tracking, i.e., eLearning, books, videos, activities, events, etc.)			
8	Pre-login catalog search capabilities			
9	Self-registration			
10	Telephone registration (IVR)			
11	Ability to download and take courses offline and upload completion information			
12	In course note-taking capabilities			
13	Ability to search for content based on performance support needs			
14	Learner viewable progress reports, showing scores, dates, course history, etc.			
	<b>Administration Features</b>			
15	Automated system to help with lost or forgotten passwords			
16	Batch registration capabilities			
17	Ability to set pre-requisites for courses or events			
18	Ability to disable a course without removing it from the system catalog			
	<b>Managing Multiple Domains and Security Levels</b>			
19	Ability to provide multiple learning portals each supporting a different department or line of business from a single instance			
20	Ability to customize look and feel for each learning portal within a single instance			
21	Each portal can have different feature sets, i.e., one portal may have a collaborative tool turned on – while another doesn't want it to show up, with a single instance.			

## 4. Classroom, Content, and Testing

Classroom, Content, & Testing	Priority	Stakeholder Alignment	NOTES
<b>Classroom Management Capabilities</b>			
Administrative Calendar for scheduling instructor-led events			
Learners Calendar for viewing and registering for instructor-led events			
Wait Listing			
Supervisory and/or Instructor approval process			
Instructor scheduling tools			
Facility or room scheduling tools			
Equipment and resource scheduling tools			
Automatic resolution of scheduling conflicts			
Automatic e-mail messaging and notification			
Customizable notification messages			
Course attendance reports			
<b>Content Development and Management Capabilities</b>			
Full features built into content authoring tools, requiring no third-party tools			
Novice authoring tool usage capabilities			
Templates and wizards available for rapid content development			
Basic test question capabilities in authored content (multiple choice, true/false, fill-in-the blank)			
Advanced test question capabilities in authored content (multiple-choice, true/false, fill-in the blank)			
Advanced question types (matching, hot-spot, drag-and-drop, etc.)			
Software simulation development tool available			
Support for rich-media content (Streaming audio, video, or animations)			
Ability to create complex, variable-based branching schemas (conditional branching)			
Ability of authoring tool to support desktop, stand-alone development of online learning content without accessing a central server.			
Authoring tools support collaborative, groupware authoring, sharing content from a central location.			
Authoring tool creates standards compliance learning content (SCORM or AICC)			
Content storage space, capability, and or services available			
Full content storage space and content management tools			
Central "learning object" repository where learning content can be searched and organized for maximum reusability and repurposing			
Content delivery engine - automatically provides navigation controls for content in learning object repository without having to author each "NextButton" or "CourseMenu" manually			
The ability to swap out skins (look and feel) of online learning modules, without re-authoring			
Metadata tagging for individual, reusable learning objects			
Workflow tools - to manage the courseware development process			
Adaptive learning - Ability to link test questions to learning content, allowing system to dynamically create new versions of the course based on pre-test performance.			
LCMS handles versioning of learning content and maintains archival versions of content			
Import utilities to repurpose Microsoft Word content			
Import utilities to repurpose Microsoft PowerPoint content			
Individual document management			
Multi-format delivery of all created content (i.e. word, power point, e-learning course, etc.)			
<b>Testing and Assessment Capabilities</b>			
Built in utility for creating separate test, exams, and quizzes from content			
Ability to draw questions from a pool of test questions			
Ability to randomize test questions upon delivery			
Individual answers can be automatically randomized upon delivery			
A number can be set for attempts per test question			
Automatic feedback can be provided during the assessment			
Timed test questions			
Timed tests			
Summary screens show test scores and other performance indicators			
Test performance data is automatically linked to learning performance reports			
Dynamic prescriptive pre-testing that can adapt course content based on gap analysis			
<b>Measurement and Testing</b>			
Built in utility for "smile sheet", Level 1 Kirkpatrick assessments			
Automatic summary report of level 2 feedback			
Special functionality for assessing Kirkpatrick level 3 (ability to apply learning).			
Ability to integrate with third-party assessment tools			

## 5. Virtual Classroom, Collaboration, and Mobile

Virtual Classroom, Collaboration and Mobile				
#	Mobile	Priority	Stakeholder Alignment	NOTES
<b>Virtual Classroom</b>				
1	Built in virtual classroom capability			
2	Ability to work with third party virtual classroom solution providers with a single login authentication			
3	Ability to work with third party virtual classroom solution provider and share scores and polling information with the system			
4	Ability to work with third party virtual classroom solution provider and track completion status for live and non-live events			
5	Ability to work with third party virtual classroom solution provider and obtain attendance reports for live events			
<b>Collaboration and Social Learning Tools</b>				
6	Learner to Learner E-mail			
7	Learner to Instructor E-mail			
8	Standard Threaded Discussion			
9	Moderated Threaded Discussion (with oversight on posting)			
10	Live instant-messaging			
11	Live group chat			
12	Ability to cluster learners into workgroups or study groups			
13	Live Voice Over IP			
14	Internal Webcasting			
15	Global broadcast messaging			
16	Virtual whiteboard (free -form drawing)			
17	Virtual power-point presentations			
18	Application sharing			
19	Learners can add comments to course materials and save them as individual study resources			
20	Blogs			
21	Wikis			
22	Media Sharing			
23	Peer rating of content or information (stars or ranking)			
24	Informal collaboration spaces			
25	Team Calendar			
26	Subject Matter Expert exchange/locator ability			
27	Collaborative content development tools			
28	Customized search engine tools			
29	Tagging and bookmarking abilities			
30	Private messaging			
31	Survey/polling tools			
32	RSS Feeds/Readers			
33	Other, please list			
<b>Mobile Learning</b>				
34	Ability to author for mobile devices?			
35	Ability to deliver to Blackberry			
36	Ability to deliver to Android			
37	Ability to deliver to iPad			
38	Ability to deliver to other?			
39	Other, please list			

## 6. Certification and Competency Management

#	Certification & Competency Management	Priority	Stakeholder Alignment	Notes
	<b>Certification Management</b>			
1	Keeps an archive of 7+ years of archive materials			
2	Keeps track of update requirements or expired certifications and sends notices			
3	Manages required certification audit trails			
4	Automatically issues printed certification upon completion			
5	Tracks certification deadlines and reports on missed deadlines			
6	Built in tools for conducting on-line proctored exams (signature gathering capability)			
	<b>Competency Management</b>			
7	Provides a comprehensive skill gap analysis based on either personally selected competency ratings or manager rated competencies			
8	Can locate profiles for a particular position or project based on defined skill requirements			
9	Can import third-party competency models			
10	Ability to link specific test questions with specific competencies			
11	Can create a many to one relationship among test questions and competencies			
12	Can modify or customize competency types, proficiency scales, or rating levels			

## 7. Reporting, Analysis, Language

#	Reporting, Analytics, Language	Priority	Stakeholder Alignment	NOTES
<b>Reporting</b>				
1	Automatically captures launch date/time and duration for elearning content			
2	Automatically captures test item analysis data (every answer given on every question, versus composite test scores only)			
3	Provides reports showing which test items were mist most often			
4	Provides standard report templates			
5	Provides dynamic (ad-hoc) report creation			
6	Provides drill down capability in reports			
7	Provides a standard dashboard			
8	Provides dashboard creation tools for administrators			
<b>Analytics</b>				
9	The system has built in, automatic metrics for showing the cost and impact of learning			
10	The system keeps track of the cost of development for all courses			
11	The system keeps track of training delivery and deployment costs			
12	Course performance data can be linked with financial information to automatically assess the Return on Investment (ROI)			
13	Analytic data can be shared through a dynamic dashboard "Real Time"			
14	The system connects to 3rd party analysis tools (Crystal Reports, Kognos)			
<b>Localization and Multi-Lingual Support</b>				
15	On-screen text is centrally located and isolated for easy language translation in the system			
16	The system can manage multi-byte support (complex characters sets for Chinese and Korean languages)			
17	The system has <i>right to left</i> script support (i.e. Hebrew)			
18	The system can manage multiple time zones			
19	The system can support multiple currency			
20	Language can be dynamically changed based on learner profile and login			
21	Language preferences can be set by the learner			
22	Language translation services			



## 8. Performance and Talent Management (Abridged)

Performance and Talent Management (Abridged)			
#		Priority	Stakeholder Alignment
	<b>Performance Management Requirements</b>		
1	The ability to keep performance records for all training events		
2	The ability to assign and keep track of job related tasks associated with learning courses		
3	Built in incentive tools, offering rewards or incentives for meeting learning goals		
4	Ability to manage goal setting process		
5	Ability to cascade goals		
6	Ability to manage the performance appraisal process workflow		
7	Ability to support multi-rater assessments		
8	Ability to assign individual development plans and connect those with learning recommendations		
	<b>General Talent Management Requirements</b>		
9	Ability to manage Succession Planning/Talent Planning		
10	Ability to manage Career Development/Career Planning		
11	Ability to manage Compensation Planning Process		
12	Ability to manage Incentive Plans		
13	Ability to manage Workforce Management Requirements		
14	Ability to manage Talent Acquisition and Recruiting Requirements		
15	Ability to conduct and manage the Employee Survey Process		
16	Other, Please list		

## 9. eCommerce and Customer Service

#	eCommerce & Customer Service	Priority	Stakeholder Alignment	NOTES
	<b>eCommerce</b>			
1	Ability to handle credit card transactions without manual effort			
2	Track and report departmental charge backs			
3	Automatically provide customer billing reports			
4	Provide commerce transactions for items other than courses, such as books, tapes, and other items			
5	Automatically maintain order status information for transactions			
6	Ability to be configured to support a commercial learning portal enterprise, such as a content provider who wants to set up a store front for selling their e-learning courseware			
	<b>Customer Services Requirements</b>			
8	24/7 customer service offering			
9	Live telephone customer service support			
10	Live online chat person-to-person technical support			
11	E-mail support			
12	Active user support groups			
13	Online newsgroups			
14	Getting started tutorial comes with the tool			
15	Product conference (live event)			
16	Vendor-offered training classes on the product available			
17	Third-party (training partners) classes available			
18	Third-party tutorials or books on how to use the tool			
19	Vendor supplies project mentoring services (help with development)			
20	Vendor offers full outsourced courseware development services			



## About Brandon Hall Group

Brandon Hall Group is a HCM research and advisory services firm that provides insights around key performance areas, including Learning and Development, Talent Management, Leadership Development, Talent Acquisition and HR/Workforce Management.

With more than 10,000 clients globally and 20 years of delivering world-class research and advisory services, Brandon Hall Group is focused on developing research that drives performance in emerging and large organizations, and provides strategic insights for executives and practitioners responsible for growth and business results.

At the core of our offerings is a Membership Program that combines research, benchmarking and unlimited access to data and analysts. The Membership Program offers insights and best practices to enable executives and practitioners to make the right decisions about people, processes, and systems, coalesced with analyst advisory services which aim to put the research into action in a way that is practical and efficient.

### *The Value of Membership*

The Brandon Hall Group Membership Program encompasses comprehensive research resources and an array of advisory services. Our Membership Program provides:

- **Cutting-Edge Information** – Our rigorous approach for conducting research is constantly evolving and up-to-date, providing your organization with current and future trends, as well as practical insights.
- **Actionable Research** – Your membership includes advisory services and tools that are research-driven and provide you a breakthrough approach to addressing immediate challenges and opportunities inside your organization.
- **Customizable Support** – Whether you are an executive or entry-level practitioner, our research and analyst insights can be leveraged at an individual level and across the entire organization. We realize that every organization has unique needs, so we provide multiple analyst and research access points.
- **Community of Peers** – We realize the value of connecting with your peers and being part of a community that is focused on continuous improvement. Your membership provides you with personal connections to fellow professionals.
- **Unlimited Access** – Every member of your team has the ability to utilize research, best practices, and advisory services when they need it most.

To learn more about Brandon Hall Group, please call us at (561) 865-5017 or email us at [success@brandonhall.com](mailto:success@brandonhall.com).

**LEARNING ON THE GO TIPS AND TRENDS IN  
M-LEARNING-A REPORT  
A Report By Decebo, November 2014**

# LEARNING ON THE GO

TIPS AND TRENDS IN M-LEARNING - A REPORT



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## THE AIM OF THIS PAPER AND THE METHODOLOGY BEHIND IT

If you are planning to deploy a mobile learning project within your organization, this paper will help you by:

- providing a clear vision of the market
- defining the business goals you can achieve
- giving you some methodological advice
- learning from the leading market experts

We have scanned the web, analyzed expert opinions, read industry leader whitepapers and talked with our customers. As a result of all this, we aim to provide you with a window into the mobile learning market.

THE MAIN RESOURCES USED IN THIS RESEARCH ARE:

**Ambient Insight Report:** The 2012-2017 Worldwide Mobile Learning Market, December 2013

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**UNESCO:** Policy guidelines for mobile learning, 2013

**Yankee 451 Group:** Mobile now; daily insights from the mobility revolution

**IDG Enterprise:** Consumerization of IT in the Enterprise, 2014



## Executive summary

The facts are impressive: mobile devices are proliferating around the world. More people are using mobile devices for more things – and, at present, there seems no end to this trend.

The advent of this mobile phenomenon is changing enterprises worldwide, encompassing all sizes of businesses, industries and all sectors of the economy. However, not all enterprises are taking advantage of mobile technologies at the same level. Some organizations simply make use of mobile devices, while other organizations have a holistic approach and can be regarded as fully integrated mobile enterprises.

One of the uses for mobile devices is for learning, especially job-related learning.

The worldwide market for mobile learning products and services is said to have reached \$5.3 billion in 2012. The five-year compound annual growth rate (CAGR) is 18.2% and revenues will more than double to \$12.2 billion by 2017.

When it comes to developing mobile learning (m-learning), it is vital to remember that m-learning is not synonymous with e-learning. So, existing e-learning materials need to be redeveloped for m-learning applications.

Understanding the end user is paramount to building a successful learning strategy. Different learners respond differently to digital learning, based upon how they prefer to learn and the content that is being presented to them. As the workforce in the western world ages, “millennials” (those who have grown up in today’s technological age) are entering the workforce. Learning developers need to take both of these potential audiences into account when developing m-learning materials. There needs to be a comprehensive strategy around how your learning is approached for tech-savvy learners and how to incorporate less tech-savvy learners into the fold.

This report outlines some of the ways to create a blended learning strategy that encompasses a wide variety of delivery methodologies. In doing so, developers should be keenly aware of their audience. Learning materials should be designed for specific media and should be aligned to organizational competencies.

The bottom line is that building m-learning programs is all about better enabling learning. Think it through. Then get creative - and know your audience.



**Valentina** has a unique background in Instructional Design. She is the creator of all of Docebo's courses in the Docebo LMS course catalog, and has extensive experience in the following: Safety in the workplace, Compliance Training, dissemination of organizational models and control systems, Privacy Training, and the development of soft skills. Valentina can be contacted on [LinkedIn](#) or via [Twitter](#).

# The m-universe: numbers and facts

by Valentina Piccioli

## How do people “feel” about their smartphones?

Mobile has evolved so much so that we have, at our fingertips, not only facts and numbers that show “how much” or “how often” people use their mobile devices but also “how they feel” about them. Data about “feelings” towards mobile devices is overwhelmingly positive - according to the Pew Research Center, 89% of adult Americans don't worry about the time they spend using their phone:

**Q29** Do you ever worry that you spend too much time using your phone, or do you not worry about this?

Based on cell phone owners [N=1,954]

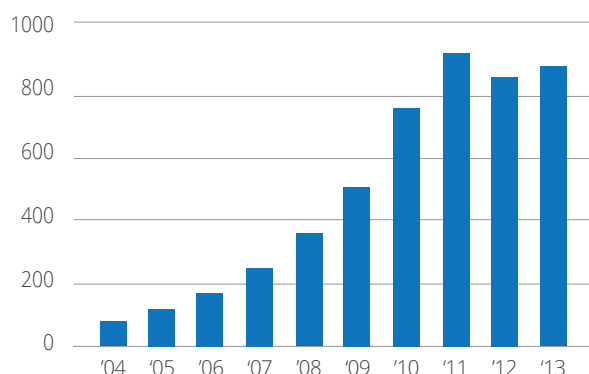
CURRENT		
-----		
%	11	Yes, worry
	89	No, do not worry
	0	Don't know
	*	Refused

The adoption of smartphones is a continuously growing trend not only in **mature markets** (such as the USA) but also in **emerging markets**. According to different sources, the second-biggest mobile phone market by the end of 2014 in terms of numbers of users will be India - and it will surpass the USA (while the first remains China).

Title: India's mobile market- Mobile subscribers (in millions)

<sup>1</sup><http://www.pewinternet.org/about/>

Millions of subscribers



Source: Reuters July 2013

Demographic data about smartphone ownership shows that the number of younger adults who own a Smartphone is growing and, surprisingly, that there is growth seen in the **mid-forty** and **mid-fifty** age groups.

According to Nielsen, 51% of mobile owners over the age of 55 now own smartphones. Moreover, “smartphone penetration continues to grow every day, with 85% of recent acquirers picking smartphones when purchasing new handsets.”

*M-learning is, without a doubt, the future for e-learning as smartphones become the BYOD of choice for work and play, and a virtual extension of the self. On-demand performance support, on-the-go knowledge checking, and learning at any time will define our next generation of students and workers. Flexible, immediate, portable, effective, engaging - that's mobile!*

Roberta Gogos, Head of Marketing, Docebo

## Key facts



Total mobile registered lines in North America will exceed 406 million by 2018



Total mobile registered lines in Mexico will exceed 115 million by 2018



Active mobile app users in Hong Kong will exceed 9 million by 2014



Mobile Data Revenue in the UK will exceed £12 billion by 2018



Total mobile registered lines in Europe will near 1.3 billion by 2018



India is among the world's fastest growing smart-phone markets

Source 451 Research Global Mobile Forecast, June 2014

### Mobile is an experience

In 2013 we assisted in making mobile devices the most common web access tool, surpassing the PC for the first time. The mobile experience is eclipsing the desktop experience, not only in our private lives but also in the workplace. And the reasons are obvious: mobile phones are always “on”, the user can access his/her handheld device 24/7 and they are more **personal** than traditional computers.

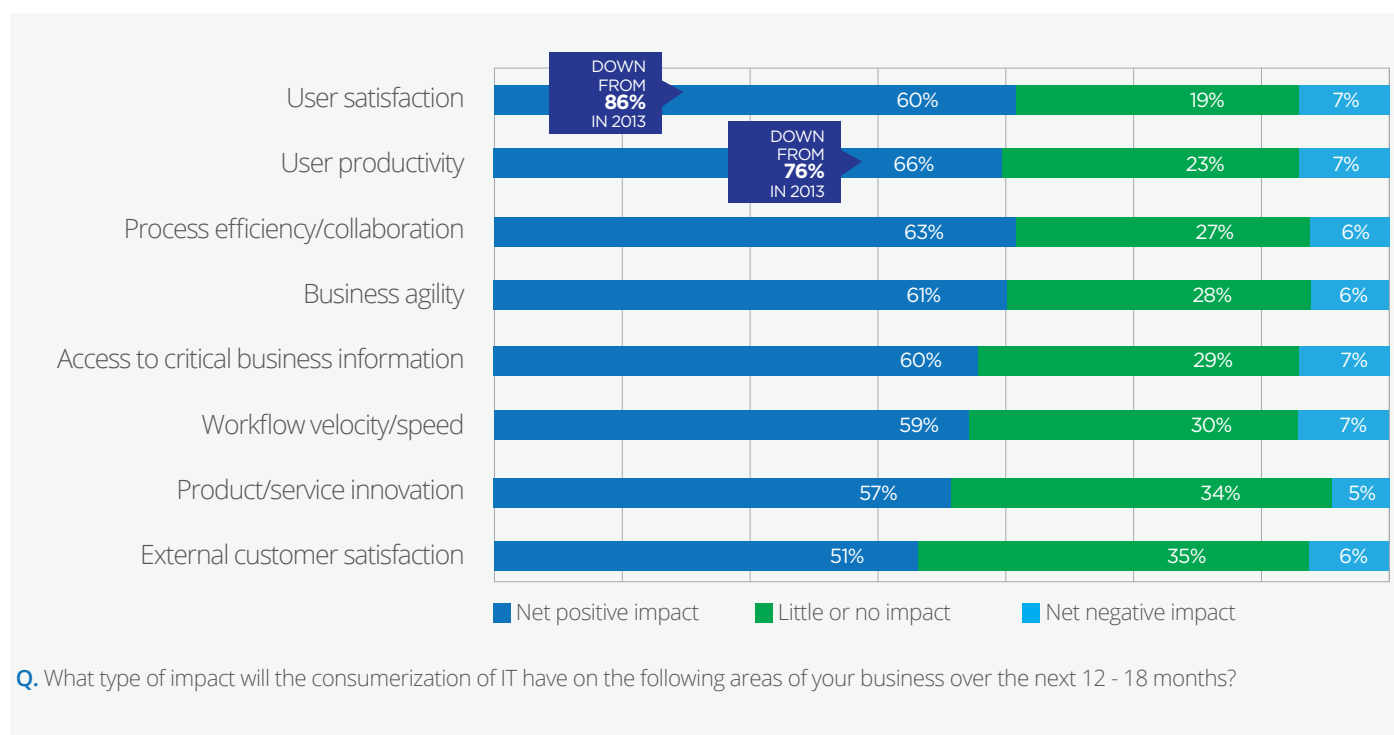
According to Gartner, **consumerization** is what drives tablet adoption in the enterprise.

*From Gartner IT Glossary:* Consumerization is the specific impact that consumer-originated technologies can have on enterprises. It reflects how enterprises will be affected by, and can take advantage of, new technologies and models that originate and develop in the consumer space, rather than in the enterprise IT sector. Consumerization is not a strategy or something to be “adopted.” Consumerization can be embraced and it must be dealt with, but it cannot be stopped.

Source: <http://www.gartner.com/it-glossary/consumerization/>



Mobility is now a business “fact of life”. For many companies, getting mobile strategies off the ground and making them successful is the highest priority for 2014. Pilot projects have, in fact, demonstrated that mobile applications serve as a more effective sales training and management platform. And, according to different sources, the consumerization of IT in the enterprise creates a positive impact in terms of: user satisfaction, user productivity, process efficiency/collaboration, and business agility.



Source: IDG Enterprise 2014 Consumerization of IT in the Enterprise [http://www.scribd.com/fullscreen/212942014?access\\_key=key-qdxu28ngrbpny-fzo65&allow\\_share=true&escape=false&show\\_recommendations=false&view\\_mode=scroll](http://www.scribd.com/fullscreen/212942014?access_key=key-qdxu28ngrbpny-fzo65&allow_share=true&escape=false&show_recommendations=false&view_mode=scroll)

## A mobile device is as essential as a morning cup of coffee

**90% American workers use their own smartphones for work**



Source: Cisco <http://www.ciscocon.com/sw/swchannel/registration/internet/registration.cfm?SWAPPID=91&RegPageID=350200&SWTHEMEID=12949>

The BYOD (bring your own device) trend is accelerating the impact that mobile technologies are having on the enterprise.

*From Wikipedia: Bring your own device (BYOD) refers to the policy of permitting employees to bring personally owned mobile devices (laptops, tablets, and smart phones) to their workplace, and to use those devices to access privileged company information and applications. The term is also used to describe the same practice applied to students using personally owned devices in education settings.*

According to IBM, the benefits of allowing BYOD within an organization are:

**Increased productivity and innovation:** *Employees are more comfortable with a personal device and become expert at using it — making them more productive. Personal devices tend to be more cutting-edge, so the enterprise benefits from the latest features. Also users upgrade to the latest hardware more frequently.*

**Employee satisfaction:** *Your people use the devices they have chosen and invested in — rather than what was selected by IT. 83 percent of users considered their mobile device more important than their morning cup of coffee. Allowing employees to use personal devices also helps them avoid carrying multiple devices.*

**Cost savings:** *BYOD programs sometimes save budget by shifting costs to the user, with employees paying for mobile devices and data services. However, this often results in few savings at best, so do not base your decision primarily on anticipated savings.*

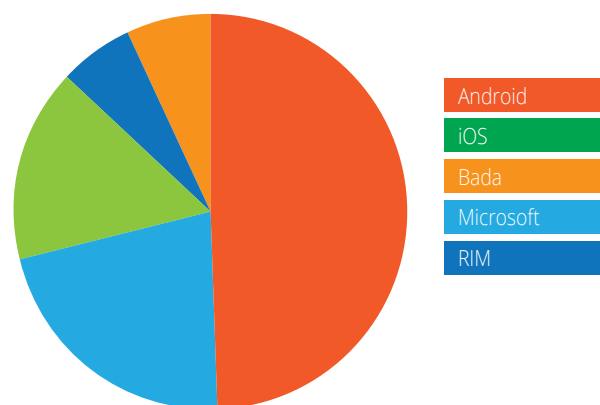
Source IBM :<http://www.ibm.com/mobilefirst/us/en/bring-your-own-device/byod.html>

### The operating system battle

According to Gartner, by 2015, over 80% of handsets in mature markets will be smartphones and Google's Android operating system will continue to lead the market through to 2016.

In smartphones, Windows could surpass RIM Blackberry to become the third largest player, and could be same size as Apple in units by 2015.

### Mobile OS Sales by Market share



Based on Gartner Forecast: Mobile OS Sales by Market Share (2009-2016)

### App Economy

According to the European Commission the number of app downloads grew a staggering 80% worldwide in 2013. Europe showed a 68% growth rate and the USA, 36%.

*"In 2013 Apps revenues reached EUR 12bn worldwide and EUR 2.75bn in Europe. China's App economy 'woke up' only recently. From nearly no downloads until 2010 China has surpassed both Europe and the USA in 2013 with a total of 23bn downloads and a growth rate of 135% for that year. However, revenues have not yet caught up. While China accounted for 26% of worldwide App downloads in 2013, it accounted for a mere 8% of revenue."*  
Source: European Commission

The mobile ecosystem (both directly and indirectly) generated around 2.2% of Europe's GDP in 2012, while also directly contributing 390,000 jobs to the European economy.

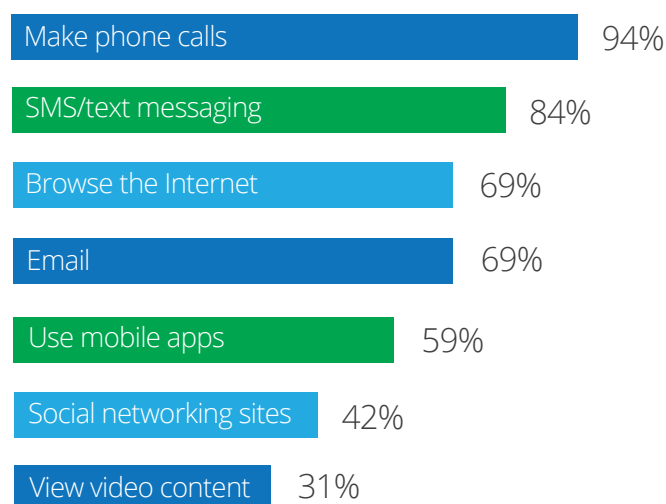
# Becoming a mobile enterprise

by Valentina Piccioli

The mobile app market is big business. There are millions of apps currently on the market and the number of business-related apps is growing by the day. As mobile devices evolve with increasing functionality, enterprises are becoming more interested in mobile apps that can replicate high-end functions that were previously limited to laptops and desktops, and also to leverage new features that are unique to mobile. The usage of mobile devices has gone far beyond calls and emails. Mobile apps are now part of one's daily work life.

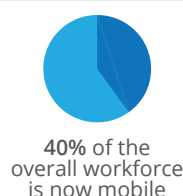
## Mobile Device Usage Goes Way Beyond Calls and Email

PERCENTAGE OF RESPONDENTS WHO INDICATED THEY REGULARLY USE SPECIFIC FUNCTIONALITY



Source: IDG Global Solutions

Mobile is strategic to business and, according to different sources, the top two drivers for investments are:



- Improving responsiveness to customer
- Mobile-enabling existing business applications

## Enterprise Mobile Strategy

The ways in which enterprises adopt and implement mobile strategies are diverse. We can simplify this by defining three scenarios:

### Business to Employee



- Higher productivity
- More effective collaboration
- Flexible handling of business processes

### Business to Consumer



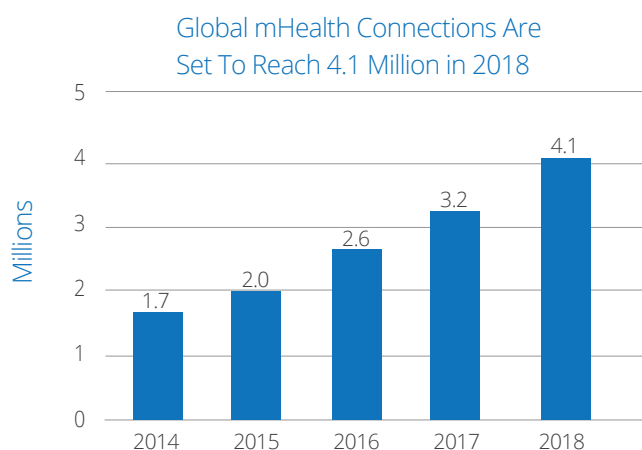
- New distribution channel
- Quality service
- Effective communication
- Customer loyalty

### Machine to Machine



- Exchange data
- Sensors in the Internet supply a wide range of information

No industry is immune to the impact of mobile devices and almost any business can take advantage of their capabilities. Obviously industries where employees are naturally mobile have been more affected by the rise of smartphones and tablets. Indeed, many of these were the early adopters. In particular, we see mobile impacting healthcare, real estate, restaurants, retail, banking and finance. And, in **education**, while it is not a vertical where users are mobile per se, we are nevertheless seeing a huge adoption rate for mobile.

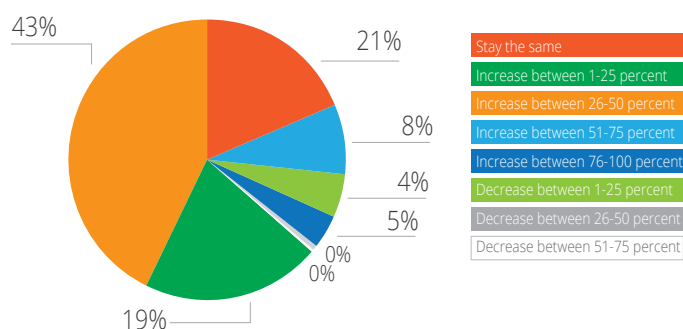


Source: 451 Research's Global Mobile Forecast, June 2014

Small and midsize companies are early adopters of mobile applications for businesses, and, according to recent surveys, more than two thirds of enterprises of all sizes are planning to increase their mobile services budget in 2015.

### More Than Two-Thirds of Enterprise Plan to Increase Their Mobile App Budget Next Year

By how much will you increase your total budget for mobile applications across your organization over the next year? (Please select one) (n=255)



Source: 451 Research's 2014 US Mobile Apps & Cloud Survey, June



Cloud computing and SaaS applications are increasingly important within a business mobile strategy. While mobile devices are considered a "mission-critical" technology for mobile workers by the vast majority of enterprises, **cloud computing** and **SaaS applications** are increasingly seen as equally important within any business mobile strategy. According to Yankee Group:

*"The rise of mobile and cloud services is pushing demand among enterprises higher than ever, while at the same time bolstering the bottom lines of vendors serving the space. That was most evident recently when cloud provider Salesforce.com's second quarter earnings surpassed estimates."*

As a consequence, the most important investments with regard to any mobile apps projects over the next few years are going to be in the areas of:

- mobile application management
- mobile application development platforms
- mobile API management
- mobile testing platforms
- mobile backend-as-a-service platforms





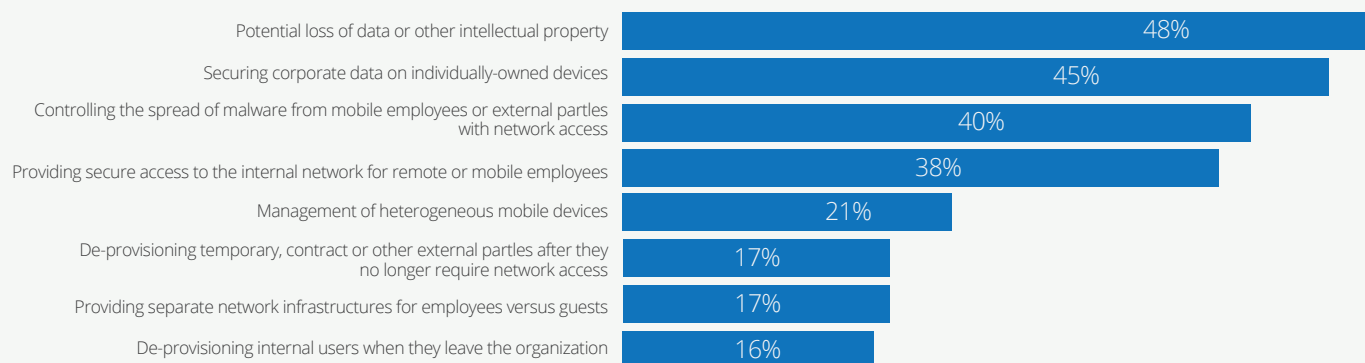
## Concerns about enterprise mobility

There are some common concerns about the adoption of an enterprise mobile strategy. These concern:

- Security
- Compliance
- Complex management for multiple devices
- Lack of awareness of solutions
- Unclear ROI

### Nearly Half of US IT Decision-Makers Worry About Data Loss When Supporting Remote Workers

Which security issues, in particular are you referring to? (Please select up to three) (n=282)



Based: Asked to those who think security is an obstacle to supporting remote and mobile workers.

Source: 451 Research's 2014 Enterprise Mobility: IT Decision-Maker Survey, June



## Conclusion

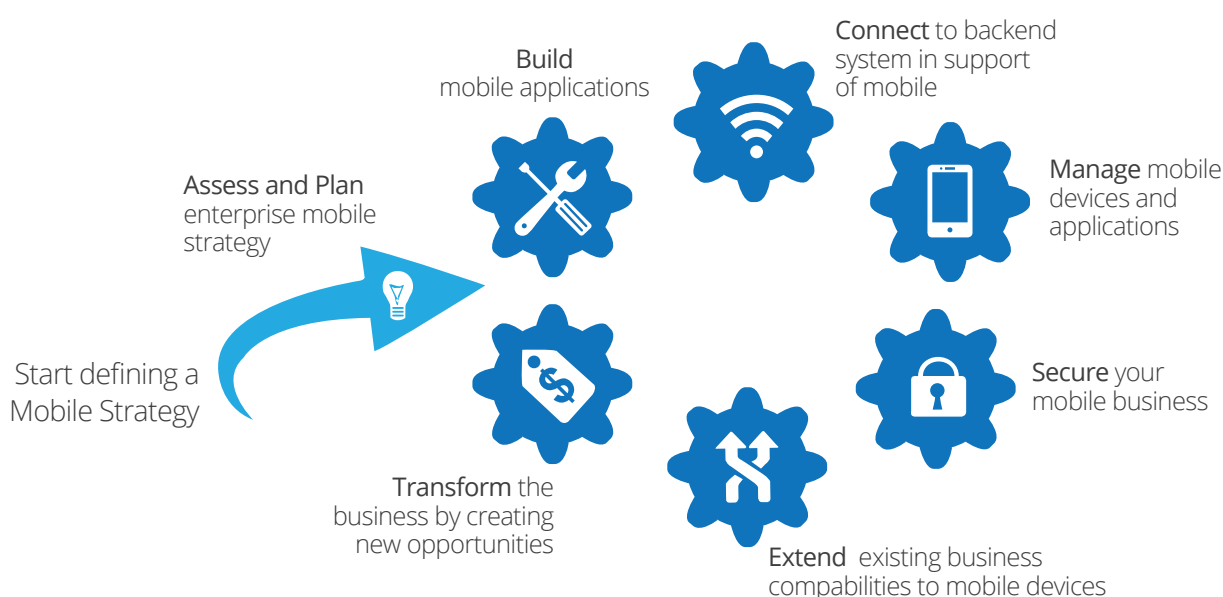
Mobile is changing enterprises worldwide, regardless of the business size or industry. However, not all enterprises are taking advantage of mobile technologies at the same level. Some organizations simply make use of mobile devices, while other organizations have a holistic approach and can be regarded as fully integrated mobile enterprises.

*“Organizations that are mobile enterprises have enabled flexible and scalable enterprise-wide mobility — for employees and*

*customers — using a holistic, integrated approach. By taking an integrated approach that aligns mobility initiatives with each other and with business models, goals and objectives, these organizations are able to provide instant access to business-critical data and applications for a variety of devices, while still maintaining high levels of security.”*

*Source: IBM - White Paper- Building the mobile enterprise: integrated, secure and productive*

## How to define a Mobility Strategy: an infographic



Source: IBM



*Born in Taranto and a graduate in Telecommunications Engineering from the University of Bologna, Francesco comes from a technical background and has more than 10 years of experience in international IT projects, management and human resources.*

*He specializes in the development of web applications, and has been working for Cezanne Software (a cloud solution for HR Management) since 2007.*

*As a Project Manager for [Cezanne OnDemand](#) in the Italian market, he is responsible for the analysis and management of Talent Management projects in Italy, UK, Spain and Portugal.*

# Smart Working: reinvigorating work with new technologies

*by Francesco Minichini Cezanne on Demand*

The spread of technologies such as smartphones, tablets and cloud systems have irreversibly changed the way we work and interact. These channels are so widespread that they are now associated with traditional channels - consider how many people don't have a smartphone and how many people regularly send email from their phones.

These new social, technological, demographic and environmental trends are radically changing the organizational and management structure of your company's human resources. This is why HR departments are playing an extremely important role in understanding and taking advantage of these changes.

Implementing a working model based on the principle of "smart working" which is capable of including these new technologies brings great benefits in terms of reduced costs and increased productivity. It also creates the foundation for a more flexible and mobile working structure.

An increasing number of organizations are implementing more flexible ways of working by decreasing, or stopping completely, limitations in terms of schedule and workplace. With this new policy comes a new approach to working.

The employee is now capable of choosing her/his schedule and where to work, as long as s/he fulfills her/his duty. This strategy has proved itself to be an effective incentive to achieving results.

We know that this kind of change may require time to take effect, especially in traditional organizations. Moreover, there may be some opposition to the change because it is difficult to modify habits. This is one of the reasons why "smart working" is not yet fully accepted in a work culture that is still tied to old processes. But, like any kind of change, this change needs a technological and organizational impetus in order to coordinate all the stakeholders involved and to overcome any opposition to innovation. Unfortunately, many organizations are bound by procedures that limit their chances of creating new opportunities.

Nonetheless, many organizations - even in traditional work cultures such as those found in much of Europe - have started "smart working" projects and understand the mutual benefit of this approach for both the company and its employees. Employees are granted more freedom concerning the way they carry out their duties as long as their goals are reached. Furthermore, employees may more easily find an acceptable work-life balance with this kind of flexibility.

Organizations experience significant benefits in terms of greater competitiveness, satisfaction and workforce productivity, thanks to the increase in flexibility and autonomy concerning working spaces, schedule and tools.

While evaluating the “smart working” approach, potential obstacles have to be considered. Research shows that remote workers are more productive than those working inside company offices. They tend to ask for fewer vacations and are more satisfied, thus reducing the possibility of their leaving the company. However, there’s also the risk of the workers losing connection with the organization, along with, possibly, opportunities for increasing productivity and for career progression.

#### What are the key elements to consider when making the transition to a more flexible workflow?

- **Focus on the people:** it’s important to conduct an in-depth analysis on the requirements of each employee. All your team members should be involved in the process of your company’s cultural change in order to understand how best to meet productivity needs and employee satisfaction.
- **Change management:** to change your workflow it’s necessary to include some training for your managers and HR managers, who are often attached to old leadership styles.
- **Engagement:** all the departments in your company should be involved in the re-design of the workflow in order to determine the most efficient and effective procedures and timing when making the shift towards “smart working”.
- **Highlight results:** the benefits resulting from “smart working” should be monitored and shared within the organization and with the management. This is the best way

to achieve the engagement you will need in order to start cultural and behavioral change - and continuously improve.

- **Appropriate, innovative and adaptable IT tools:** the market is encountering an increasing number of millennials - people who were born surrounded by modern technology and are used to interacting with such tools in their day-to-day activities. This is another reason why organizations cannot ignore the latest technological developments - to avoid missing out on potentially hiring such talent. Tools must be a resource for people and should perfectly integrate with their daily working activities. It is not sufficient to give your employees a corporate laptop or smartphone. It is vital to create the ideal technological working conditions in order to keep your employees always connected with each other, so that they can easily share ideas, documents and files.

Modern HR management software usually has a number of features that simplify communications within the organization, making remote working easy for employees.

HR portals and social groups give employees an interactive space in which to communicate, share information and work with other colleagues in a more efficient and collaborative way. Manuals, corporate policies or standard forms can be loaded to a safe area of the HR portal, in order to create a single repository where employees can find all the documents they need.

An interesting consequence of “smart working” is the development of “working groups”. These are basically safe platforms where colleagues can share information and documents, and collaborate in an intuitive, effortless way with different people in real time. The result is a tangible improvement in the employee’s productivity.

# Mobile learning: right here, right now

by Valentina Piccioli

M-learning is something that is happening right now, all over the world, in all industries and in all sized enterprises. The main driver for this revolution is basic consumer behavior - there's at least one smartphone in each hand.

*"In contrast to the previous technology revolution of the PC and later the laptop, this chain of events is happening first at home and then flowing into the workplace."*

Gary Woodill, Senior Analyst, Float Mobile Learning

This adoption of mobile learning happened faster than expected. In fact:

*"Those with several years' experience in using technology-enabled learning report higher levels of mobile usage, but we also see a spike in usage in those that are new to using learning technologies, implying that some are adopting **mobile solutions as part of their first steps with learning technologies.**"*

*Towards Maturity- Mobile learning in the workplace*

But what is m-learning? Even if there much disagreement on the definition of m-learning, most will agree that it's **more than simply learning on a mobile device**. We are already used to seeing people moving around with their laptops and taking lessons or training sessions whenever and wherever they can. We could say that we are already over this first generation of ubiquitous learning.

Mobile learning is learning **on-the go** and learning at the **point of need**, but it is also a way of **consuming content**, a **social** experience and an **informal** way to learn. The vast majority of mobile apps represent on-demand content, performance support or education.



*We were given legs for a specific reason: to move. Allowing people to take classes wherever they go is the ultimate game-changer in learning.*

*Dario De Angelis, Digital Marketing Manager, Docebo*

When talking about m-learning we must take into consideration m-learning as a training methodology, a social trend and a business game changer. We must also take into account that:

- M-learning transforms traditional training, supports performance at the point of need and, is informal - and social - by nature.
- The use of m-learning in the non-institutional learning context appears to be the most successful strategy to adopt for now.

*"Drawing from the literature on both mobile learning and informal learning, Jones et al. (2006) proposed six reasons why mobile informal learning might be motivating: control (over learners' goals), ownership, learning-in-context, continuity between contexts, fun and communication."*

*A.Jones and K.Issroff, Motivation and Mobile Device*

Finally, we have to consider **m-learning as an evolutionary trend**. It not only grows in numbers but changes its face each time there is a new technological opportunity or new business model. Let's think about m-learning in two years from now. We can imagine that, besides smartphones and tablets, we will also have smart wearable devices such as smart watches and smart glasses.

*"These devices are coming and they will change the ways we look at mobile learning."*

*David Kelly, Training, Learning, and Performance Consultant*

## Conclusion:



*As a mother, I hope to see m-learning in the most unlikely places, for example, I expect to see a mother who, while watching her son playing football, can be found on her iPad looking at all the information she needs to become a football expert! This is also mobile learning.*

*Valentina Piccioli, Partner Network Manager, Docebo*

## M-LEARNING TERMS YOU NEED TO KNOW!



### Mobile Application

Most commonly known as an app, is a type of application software designed to run on a mobile device, such as a smartphone or tablet.

### HTML5

HTML5 is a W3C specification that defines the fifth major revision of the Hypertext Markup Language (HTML). One of the major changes in HTML5 is in respect to how HTML addresses Web applications. All smartphones and tablets already support some version of HTML5, although there are many differences of detail depending on browser and OS versions.

### Just in Time Learning

Just-in-time learning systems deliver training to workers when and where they need it.

### Geolocation

Geolocation is used to identify the geographic location of an object, usually a mobile phone or other device connected to the Internet. Knowing an individual's location is a key enabler for the delivery of highly relevant contextual information.

### Bring Your Own Device (BYOD)

BYOD refers to the policy of permitting employees to bring personally owned mobile devices to their workplace, and to use those devices to access privileged company information and applications. The term is also used to describe the same practice applied to students using personally owned devices in education settings.

### Responsive Design

Responsive Design or adaptive design is one of the advantages enabled by HTML5.

We can now develop a single e-learning module which will work on all devices.

# Mobile learning trends and forecast

by Valentina Piccioli

According to research on the mobile learning market conducted by Ambient Insight, the **worldwide market for mobile learning products and services reached \$5.3 billion in 2012**. The five-year compound annual growth rate (CAGR) is **18.2%** and revenues will more than double to **\$12.2 billion by 2017**. (Ambient Insight's 2012-2017 Worldwide Mobile Learning Market Forecast).

The most relevant drivers for this impressive growth can be found in the mobile learning market itself (and even the learning market). The evolution of the mobile market is making the penetration of m-learning possible by default: not only are the numbers of people who own a smartphone or tablet growing (the audience is getting bigger), but the way people can buy learning contents is simplified by new direct carrier billing agreements.



People with smartphones can make their purchases without even using a credit card!

But, according to Ambient Insight there are also some catalysts for mobile learning's growth more strictly related to the evolution of the learning market:

- The explosion of mobile learning value-added services (VAS)
- The strong consumer demand for mobile learning
- The large scale tablet adoption in consumer and academic segments

Having stated that the demand for mobile learning is strong, let's examine what consumers in the m-learning market are looking for - notably:

- Packaged content
- Value added services (VAS)
- Custom content development services
- Authoring tools
- Platforms

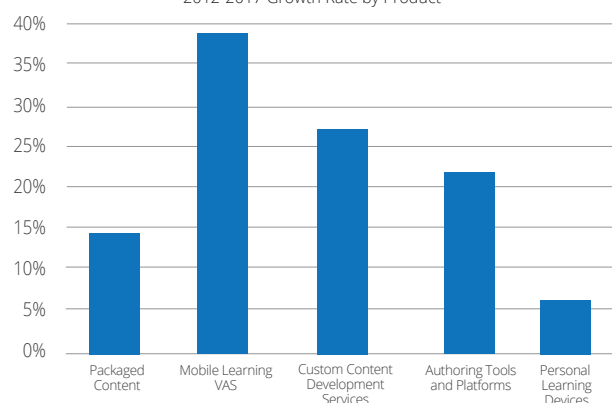
Consumers are direct buyers for packaged content (B2C business model) and VAS, while enterprises and institutions are also looking for content development services, authoring tools and platforms.

The table below, from Ambient Insight, shows just how fast growth of mobile learning value added service (VAS) is:

2012 - 2017 Worldwide Mobile Learning  
Five-year Growth Rates by Product Type

Across All Regions

2012-2017 Growth Rate by Product



Ambient Insight 2013

Source: Ambient Insight's 2012-2017 Worldwide Mobile Learning Market Forecast

That means that consumers dominate this market at a worldwide level (although there will be differences in the general trends between different geographies).

## Worldwide Market for Mobile Learning


**\$5.3B**  
in 2012

**18.2%**  
(CAGR)

**\$12.2B**  
by 2017


In examining each geographical area we will compare the CAGR for the mobile learning market and revenue, and then discuss the strongest drivers for each market.

5-year Compound Annual Growth Rate (CAGR) for the Mobile Learning Market		Revenues by 2017	
Africa	38.9%	Asia	\$ 6.8 billion
Latin America	32.5%	North America	\$ 2.1 billion
Asia	21.2%	Latin America	\$ 1.4 billion
Middle East	18.4%	Western Europe	\$ 885.1 million
Eastern Europe	14.7%	Africa	\$ 530.1 million
Western Europe	9.0%	Middle East	\$ 205.4 million
North america	7.6%	Eastern Europe	\$ 193.1 million

**Africa** has the highest mobile learning growth rate in the world, but **Asia** will generate the highest revenues for mobile learning on the planet. **North America** follows the typical pattern of a mature market: low growth rate, with high revenues generated.

## AFRICA

Several countries in Africa have mobile penetration rates at over 100%.

The African mobile telecom market is forecast to grow from a combined value of over US \$60 billion in 2013, to a value in 2020 of almost US \$234 billion – with a compound annual growth rate (CAGR) of 21.27%.

Large rural populations across Africa are now avid users of mobile learning technologies, while relatively few have experienced self-paced e-learning on a PC.

Telecoms have a significant advantage in developing economies as they are often the only electronic payment gateway.

### A continent of mobile operators

At the end of 2Q 2013, the total subscriptions in Africa reached 863 million.

Mobile network operators will generate the largest portion of this revenue.

One of the five major catalysts driving the growth of m-learning is the boom in mobile learning VAS.

Telecoms are major players in the mobile learning market in Africa because of their own app stores, direct carrier billing agreements with device makers, and their mobile learning VAS offerings.





## ASIA

At 87% of the population, smartphone penetration is highest in Singapore and Hong Kong, followed by Malaysia (80%), Australia (75%) and China (71%), said a Nielsen report.

The device makers and telecoms are now major competitors in the Asia mobile learning market.

Mobile learning is their primary learning technology and they may never be exposed to other learning products.

### The perfect pair: inexpensive smartphones and 4G networks

The mobile internet user base in India will more than treble to 480 million by 2017 from over 155 million today.

It is common in Asia for general-purpose device makers to partner with educational publishers and offer education bundles with digital content preloaded on general-purpose tablets.

Mobile learning VAS products are now used by over 200 million subscribers in Asia.



## EASTERN EUROPE

While the aggregate growth rate is 14.7%, four countries have higher growth rates: Azerbaijan, Kazakhstan, Moldova, and the Ukraine. (Ambient Insight)

The Azerbaijan economy has been markedly stronger in recent years and, not surprisingly, the country has been making progress in developing its ICT sector (Wikipedia).

Ukraine with more than 59 million of users is at number 22 in the worldwide list of countries for mobile penetration. (The World Factbook)

The leading mobile operator in Ukraine since 2001, Kyivstar, is also looking at VAS as an additional revenue stream.



## WESTERN EUROPE

By the end 2012, every one of the 24 countries analyzed in this report had a mobile penetration rate above 100%.

There is a high demand for packaged mobile learning content and custom content development services.

Samsung is now a major competitor in the mobile learning market in Western Europe. Samsung began rolling out its tablet-based Smart School solution across the region last year.

### One buying behaviour for each country!

Consumers buy educational apps, subscribe to mobile learning value added service (VAS) products, and purchase personal learning devices. The consumer demand for mobile learning across the region has always been healthy and has become strong due to recent direct carrier billing agreements. This is vital for the “app economy” in countries with low credit card usage.

National academic plus EU digitization efforts: in September 2013 the European Union launched the Opening up Education program funded with “tens of millions of Euros”.

Bring Your Own Device (BYOD) initiatives are becoming common in the region.



## LATIN AMERICA

High-speed networks are rolling out across the region at a rapid rate.

The average mobile penetration in the region is almost 97%. Mobile phone use is extremely high for all socio-economic groups in the region.

English language learning is in high demand.

The major market-driver is the relatively recent launch of dozens of mobile learning VAS products across the region.

The strategy of delivering educational content through standard mobile phones is particularly well-suited for use in rural areas where educational resources are scarce and fixed broadband connections are unavailable or unreliable. (UNESCO)



## MIDDLE EAST

The mobile learning growth rate in the region is 18.4%.

According to the TradeArabia News Service, 73% of all phones in use in July 2013 in the UAE were smartphones. This represents the highest smartphone penetration rate in the world.

In the current mobile learning market in the region, telecoms have a major advantage due to their billing capabilities.

Countrywide academic content digitization efforts are underway in most of the countries in the region.

Bahrain, Oman, Yemen, Qatar, Jordan and Kuwait have growth rates over 50%.

The preference for mobile learning over e-learning is also starting to take hold in academic segments.

Another major catalyst in the region is government mandates designed to increase English proficiency.



## NORTH AMERICA

- While the growth rate may seem low compared with the other regions in the world, the revenues are extremely high (it's a mature market).

The two major buying segments across North America are the consumer and healthcare segments.

The mobile learning product type that will generate the highest revenues in North America throughout the forecast period is packaged content.

Canada shows an overall growth rate higher than the US.

The Ontario College of Art and Design University (OCADU) has the "Taking Ontario Mobile" (TOM) project, which is researching the state of mobile computing, including mobile learning, and its prospects in Ontario.



**Amol** is a highly respected e-learning professional and an acclaimed E-learning Solution Sales Consultant. He is passionate about the latest technologies in E-learning, with an in-depth and hands-on understanding of various Learning Management Systems and E-learning technologies. He is a seasoned Learning Management System Consultant with over 10 years in e-learning software and enterprise applications selling and consulting. He brings rich cross-functional experience, passion for innovation and expertise in transforming learning strategy into high quality e-learning solutions.

He has a Master's degree in Business Administration from Mumbai University and is highly passionate about e-learning. During his free time you will find him experimenting with new recipes or travelling to explore new places.

# Mobile Learning: The future of learning in India

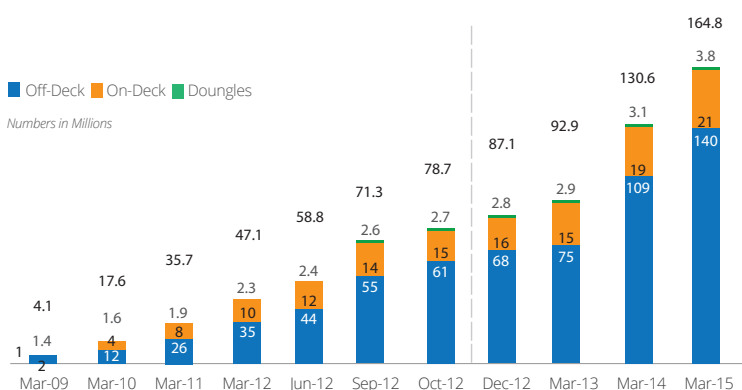
by Amol Shinde

The worldwide market for mobile learning products and services is growing at a 5 year CAGR of 22.7%, and India is no exception.

Given current trends, by 2015, India is expected to be among the top 10 countries when it comes to buying mobile learning products and services - along with the USA, China and Japan.

In India, the mobile phone has revolutionized communication. India is now one of the fastest growing markets for mobile phone services, with growing usage and increasing market penetration. As stated in a report published by the Internet and Mobile Association of India (IAMAI) and the Indian Market Research Bureau (IMRB), India will have around 165 million mobile internet users by the year 2015. This is almost double the current 87 million mobile internet users. This means that mobile devices are not only communication devices but channels for interactions and learning.

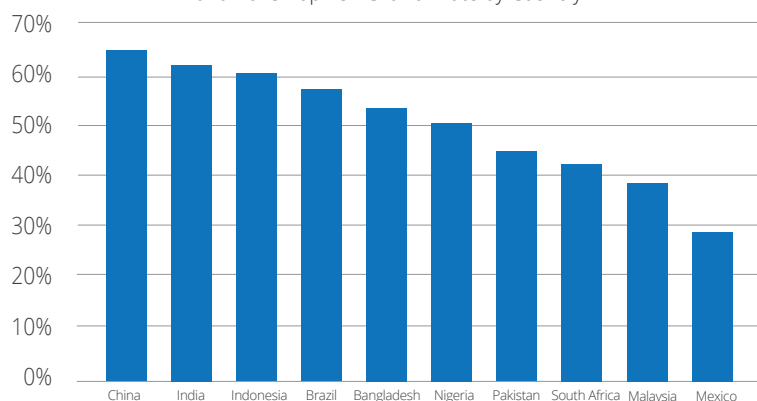
## Future estimate of Mobile Internet Users



## 2010-2015 Worldwide Mobile Learning Five-year Growth Rates by Country

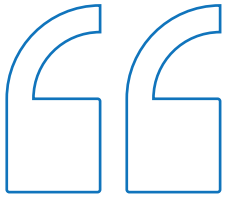
Across All Product Types

2010-2015 Top Ten Growth Rate by Country



Ambient Insight 2011

Ref: Ambient Insight Report "2010-2015" Worldwide Mobile Learning Market estimate



As suggested in a research study conducted by Ambient Insight, India will be the second largest country for buying mobile learning products and services by 2015 with a whopping growth rate of 61.3%. This reflects the fact that the mobile learning space is rapidly evolving in India and playing a significant role in imparting learning. The significance of m-learning is slowly and steadily being realized by L&D and there have been efforts taken towards developing the necessary applications to impart m-learning.

The key drivers behind growth of mobile learning in India are: the increase in market penetration of mobile devices, portability, small size, low price and - most importantly - mobile devices' adaptable technology. The government initiative to distribute Akash Tablets at school has ensured m-Learning will continue to rise in India. Given the statistics available, there is no doubt that m-Learning in India is going to define the future of learning there.

## Conclusion

Since India is considered to be an emerging market for mobile, and as millions of people become equipped with mobile devices, this mobile workforce represents a great opportunity for mobile learning in India.







**Josh Squires** is currently serving as the Chief Operating Officer of Docebo EMEA. Josh has spent the past 15 years researching and implementing creative learning solutions within corporate and higher education environments. With clients ranging from Motorola to Disney, he has been on the designing and implementing stage of a wide range of learning scenarios with customers spanning the globe. Josh has also taught Instructional Technology theory and tools, as a consultant and faculty member, for over eight years in both Corporate and Higher Education environments.

# M-Learning Strategies

by Josh Squires

As presented elsewhere in this report, mobile devices have taken the world by storm. The ready availability of high-powered computing in your pocket opens a new world of possibilities for learning. With this massive rise in accessibility comes many new challenges that will be required for the design team to overcome prior to launching your m-learning course.

There are many strategies for integrating m-learning into your corporate learning structure and there are many pitfalls as well. In this section we will discuss the things to avoid or to be aware of and, then, some best practices that you can use within your learning environment.

## Common Challenges when developing a mobile learning strategy:



## Desktop Learning is not the same as Mobile Learning

This is a common challenge that many learning departments initially assume when considering the addition of m-learning to their organizational learning strategy. The types of e-learning delivered by different media are different. The way users interact with a desktop/laptop is different from the ways users interact with a tablet (I still haven't figured out "right click" on my tablet) or smartphone. Building out your learning needs to take into account not only the technology capabilities and limitations but also the Human Computer Interaction (HCI) affordances of each type of technology. You also need a specific strategy for how you want to deliver the learning being created, based on the delivery technology itself.

**BYOD** - Bring your Own Device - This is a term or concept often associated with mobile learning. Basically it means that you design content once and that, no matter how your learners access it, the content will transform to their particular delivery platform. While this is frequently used as one of the main selling points for including a mobile learning strategy into your overall organizational learning strategy, it is a mistake to think that you can design once and have it applicable to all devices.

This concept goes against the very soul of instructional design as each learning experience should be crafted based upon a studied and analyzed methodology. Knowing how your end user will interact with the learning material is almost as critical as the learning material itself. Understanding how your users will be interacting with your learning content is part of the design methodology employed in building high quality and successful learning. While you can build a multi-platform delivery model, you have to design to the least common denominator (typically mobile). This means that you are doing a disservice to the learners. Different physical settings allow for different levels of concentration and engagement. Different technological capabilities require different learning design and interaction strategies. To implement a best practices approach, design your learning based upon a well-thought-out learning strategy and build an instructional strategy around the device(s) you wish your learners to use, based upon this strategy.

**The digital divide still exists** - Understanding the end user is paramount to building a successful learning strategy. In many parts of the world, e-learning has always (since the late 1990s at least) been a part of many workers' professional development plans. Different learners respond differently to digital learning, based upon how they prefer to learn and the content that is being presented to them. As we are presented with an (overall) aging workforce while new generations are entering the workforce, we are still faced with digital divide issues that began to plague our industry in the mid-1990s. With the emergence of Mobile Smart devices as a common feature of the workplace it makes perfect sense to include a mobile learning component as a core or supplemental part of your organization's learning strategy.

Revisiting the full digital divide challenge from a Learning and Development standpoint is essential. There needs to be a comprehensive strategy around how your learning is approached for tech-savvy learners and how to incorporate your less tech-savvy learners into the fold. This approach is paramount as there are significant differences in how different generations interact and use technology. This has to be taken into account for your m-learning strategy. Generational and tech familiarity gaps exist and the comfort levels of your learners need to be addressed within your m-learning strategy.



## Revisit your Learning Strategy

Now that we have taken into account some common challenges when coming up with our m-learning action plan we can begin to strategize methods for integrating m-learning into our overall learning strategy in a well thought out and strategic manner.

Building a learning strategy is hard work, time consuming, underappreciated by most departments outside of L&D/ Training, and often times take years to show ROI. That is the easy part! The hard part is to convince your entire company that the strategy that your team has worked on for years can be enhanced to make their lives easier by adding a mobile element to it. Many learners may have some hesitation to jumping on board the m-learning bandwagon. This is the opportunity to integrate some great knowledge management strategies into your learning strategy.

### Integrate your mobile learning strategy into your organizational learning plan

Working for months - sometimes years - around building Key Performance Indicators (KPIs), Performance Objectives, Terminal and Enabling Objectives, and organizing all of these into learning paths and plans can be painful. But, doing all this gives you have a perfect opportunity to revisit these key competencies and objectives and see which ones would be a good fit for an m-learning refresh.

There has been lots of great e-learning over the years - from Serious Games and interactive branching scenarios to highly interactive courses built with rapid authoring tools. So it's sometimes hard to understand how to jump into an m-learning path.

After all, there are differences between the capabilities of different devices as well as how different users interact with them.

Nonetheless, this is opportunity time. Implementing an m-learning strategy is an excellent chance to reduce time spent on lengthy, time-consuming courses. It's a chance to take some key competencies and rework them to be delivered either in a just-in-time manner (think "job aids") or to develop a series of bite-sized **Learning Pills** that allow quick and easy access to consumable content.



The other great option with mobile devices is that most users of smart devices are familiar with messaging capabilities. Integration of some of the new learning standards such as xAPI/TinCan allows your learning management system to capture this data and add it back to your learners' learning records.

Take your existing organizational competencies, skills, objectives and so on and evaluate what can be broken down into short extremely concise learning chunks (I like the term "Learning Pills") and then build it in a medium that works best for the greatest number of mobile devices (and remember you need to design for the least common denominator). Ideally, small videos or short and not very complex interactive packages work great. Follow them up with a quick knowledge check and you have an excellent standard Learning Pill.

If you've mastered the more basic model of m-Learning Design and have the capability to offer and support some real time interactions, build in a messaging component to your Learning Pills that allows for just-in-time communications with and between your learners to enable a true collaborative learning environment.

If you have the ability to unify the mobile learning environment through standardization of smart phones or tablets, think about taking greater advantage of the features contained within the device. Location tracking or delivering content based upon location, integration of cameras or videos recording best practices uploaded via the phone are great methods of supporting m-learning.

The main design goals of your Learning Pills should be that the direct instruction should never be longer than three to

five minutes. It should include some form of quick knowledge check and it should align directly to your overall learning plan. Using other features within the device are great but this has to be well planned and have specific goals.

## Wrapping it all together

Use **m-learning** in conjunction with classroom (live or web based) delivered learning and your traditional e-learning courses. There is nothing stopping you from creating a great blended learning strategy that encompasses a wide variety of delivery methodologies. In doing so, you should be keenly aware of your audience. You should also remember that the learning is designed for specific media and should be aligned to your organizational competencies. The bottom line is that building m-learning programs is all about better enabling learning. Think it through. Get creative - and know your audience.

*Information at your fingertips at any time in any place is not science fiction, it is now a reality. M-learning is the logical next step for a ubiquitous learning environment. Learn, train, and understand when you need to.*

*Josh Squires, Chief Operating Officer EMEA, Docebo*



**Cindy Pascale** is the CEO and co-founder of Vado. She has 16+ years of HR, Training & Development and OD leadership experience and 12 years running talent management, development and assessment companies. Vado is the e-learning courseware provider 'changing the face of learning'. Please visit the [Vado website](#) and feel free to contact Cindy about your off-the-shelf management development and employee soft skill development e-learning needs.

# Mobile Learning Content Design: 3 Must Haves

by Cindy Pascale

The other day I was sitting on a commuter train and noticed the woman sitting next to me. Without being too obvious in my visual eavesdropping, I noticed she was taking an e-learning course on her iPhone. She finished the course before our destination and gave herself a small congratulatory fist pump.

That woman represents a growing segment of learners — mobile learners. In fact, offering mobile learning is important for a number of reasons as it can drive significant benefits, including:

1. A greater number of course completions
2. Delivering your performance support strategy
3. Engaging your Millennials

According to a case study conducted by Merrill Lynch, mobile learners have a 12% higher completion rate than courses completed on a laptop. Also cited in this study is that the learners completed the training 30% quicker than those using classroom-based learning delivery. The reasons for these two great success statistics can be attributed to two further interesting statistics:

1. Mobile learners study 40 minutes more each week by studying everywhere they go.
2. Students with smartphones are twice as likely to study between 6a.m. and 8a.m.<sup>1</sup>

Performance support is delivering training content at the time and place of need — on-the-job. We have all heard the statistics showing that 70% of development happens on-the-job. By providing learning content that can be accessed while on-the-job, companies are leveraging the natural way a person develops — on-the-job. So, to deliver on your performance support strategy, you will need to adopt a mobile learning strategy.

Or, perhaps you are considering adopting mobile learning to engage the Millennials in your workforce. This is a valid strategy as 36% of the workforce will be made up of Millennials by the end of 2014. These workers have grown accustomed to using their hand-held devices for all their social needs, watching YouTube videos, gaming, banking, shopping online and much more. They have come to expect the same mobile convenience with their on-the-job training. Companies are responding by bringing the training to them - on their mobile devices - where they are comfortable and familiar.

The reasons for adopting a mobile learning strategy are compelling. Yet developing mobile learning content is not as simple as delivering your current e-learning courses on a mobile device. Mobile learning content needs to be designed with the audience and intended use in mind.





Here are three tips to consider when creating or converting your learning content into m-learning content:

**1. Short, bite sized learning content.**

To enable performance support and to keep a learner engaged on a small screen, your m-learning courses need to be short — two to four minutes of learning content. Think of it a little differently than a time stamp — think one discreet learning objective at a time.

**2. Videos.** Not just videos but high definition HTML videos. Without getting into the technical details, HTML will work on “iProducts” whereas Flash videos will not. And use high definition because your Millennials are accustomed to high definition video games and, just like they have come to expect m-learning, they have come to expect high definition videos.

**3. Job Aids.** Again, to enable your performance support strategy, provide Job Aids for on-the-job application so that your learners have something tangible to use once they exit the course.

If you incorporate these three design principles into your m-learning strategy, you will be delivering m-learning courses that will meet your m-learners’ needs. This should lead to higher completion rates in less time. Another benefit is that, while you cannot deliver your e-learning courses as m-learning courses, you can get a dual benefit and deliver your m-learning courses to your e-learning learners, increasing your return on investment for all m-learning courses created or purchased.

1. The [Why Consider M-Learning Infographic](#) was created by Michaels & Associated Learning Solutions.

## MOBILE LEARNING GLOSSARY

### 3G

3G refers to third generation. It is the latest evolution in phone technology, following on from 1G analogue and 2G digital mobile phones. 3G offers high-speed data transfer rates which allows mobile broadband and two-way video calling.

### Accelerometer

An Accelerometer is generally used for measuring acceleration. Within a mobile phone the accelerometer detects the motion of the handset, and will auto rotate the display to show in landscape rather than portrait mode when the phone is rotated 90 degrees. This is ideal for viewing photos on the phone screen in full screen mode.

### Audioblog

A blog that mainly publishes audio files (music or podcasting) sometimes with text and keywords for search engine optimization.

### Bandwidth

Bandwidth (the width of a band of electromagnetic frequencies) is used as a measurement for the amount of data that can be transmitted per unit of time. Any digital or analog signal has a bandwidth. To download a photograph in one second, a higher bandwidth is needed than to download a page of text in the same time.

(SAP Mobile Business Glossary)

### Big data

Big data is high-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making.

### BYOD

BYOD refers to the policy of permitting

employees to bring personally owned mobile devices (laptops, tablets, and smart phones) to their workplace, and to use those devices to access privileged company information and applications. The term is also used to describe the same practice applied to students using personally owned devices in education settings.

(Wikipedia)

### Bluetooth

Bluetooth technology allows connections between electrical devices without the need for wires. The benefit includes car kits and headsets that can be connected to a mobile phone without the need for wires. Bluetooth is a short range technology, usually working up to a distance of 10 metres.

### Chunking

The process of separating learning materials into brief sections in order to improve learner comprehension and retention.

(<http://www.mobl21.com>)

### Cookie

A cookie is an information for future use given to a Web browser by a Web server and is stored by the server on the client side of a client/server communication. The information is then sent back to the server each time the browser requests a page from the server. The main purpose of cookies is to identify users and possibly prepare customized Web pages for them.

(SAP Mobile Business Glossary)

### Device

In a mobile context, device includes PDAs, Palms, Pocket, PCs, cell phones or any hardware that provides location-independent access to information, applications or services.

(SAP Mobile Business Glossary)

### Digital Natives

A person for whom digital technologies already existed when they were born, and hence has grown up with digital technology such as computers, the Internet, mobile phones and MP3s. (<http://www.mobl21.com>)

### GPS

Global Positioning System; refers to the use of satellite-to-handheld receiver signals to determine location.

### Hotspot

An area where wireless service is made available for Wi-Fi enabled devices or computers to access the Internet.

### HTML5

HTML5 is a collection of proposed specifications for the next generation of HTML. Beyond this, HTML5 is used as a short-hand label for all that's new with the Web, including CSS3 and changes to HTTP.

### LTE

LTE and its successor LTE-A are cellular technologies that improve spectral efficiency and will push cellular networks to theoretical peak downlink speeds of up to 1 Gbps. Additional benefits include reduced latency. Real-world LTE speeds tend to be under 100 Mbps and early LTE-A trials have peaked at around 300 Mbps in best-case conditions.

### Offline

Offline technology - in distinction to online - is used for scenarios with much more local business logic. Online working is only possible during the data synchronization and the changed data then will be stored on the device local.

**Online**

Online means continuously online mobile web access. This kind of access makes sense for scenarios handling time sensitive data, needing only less data input or output without using databases.

**Online on Demand**

Online on Demand is a cached web access: offline data cache and online access whenever needed.

**Java**

Most phones these days support Java. Java is a programming language, used for many games and programs such as web browsers and email programs that you can install on your phone.

**EDGE**

EDGE is enhanced speed for data transfer across a GSM network. It can be seen as an alternative to 3G, and can be used to offer faster transfer rates by networks in areas where they do not have 3G coverage.

**mLMS**

Mobile Learning Management System (mLMS) – a learning management system for mobile devices.

**MP3**

MP3 employs a compression technique, with bits of information being discarded to allow data to be compressed into files that are relatively small in comparison with .WAV files, but which retain subjective CD quality.

**Mobile Application**

A software application that runs in a handheld device such as a smartphone.

**Multi-Touch input method**

In mobile computing, multi-touch refers to the capability of a touchscreen (or a touchpad) to recognize two or more points of contact on the surface concurrently. The constant tracking of the multiple points allows the mobile phone interface to recognize gestures, which enable advanced functionality such as pinch-to-zoom.

**Operating system (OS)**

The base software of a computer device; mobile OSs include Palm OS, PocketPC, Android and Symbian.

**Podcast**

A podcast is a series of digital media files (either audio or video) that are released episodically and often downloaded through web syndication. (<http://www.mobl21.com>)

**QR Code**

Quick Response Code (QR Code) is a two-dimensional bar code, which can be read and decoded with a camera.

**Responsive**

Responsive web design (RWD) is a web design approach aimed at crafting sites to provide an optimal viewing experience—easy reading and navigation with a minimum of resizing, panning, and scrolling—across a wide range of devices (from mobile phones to desktop computer monitors). (Wikipedia)

**Smartphone**

A smartphone is a mobile communications device that uses an identifiable open OS. An open OS is supported by third-party applications written by a notable developer community. Third-party applications can be installed and removed, and they can be

created for the device's OS and application programming interfaces (APIs). Alternatively, developers must be able to access APIs through a discrete layer such as Java. The OS must support a multitasking environment and user interface that can handle multiple applications simultaneously. For example, it can display e-mail while playing music. (Gartner IT Glossary)

**Touchscreen**

A touchscreen allows input to be made onto a device simply by pressing on the screen. Often the UI on the device will offer large icons which all correspond to a particular feature. To open that application you simply touch the screen where the icon is displayed.

**Widget**

We get the word Widget by combining Window and Gadget. A widget is a screen based control that is used to interact with a website or other systems. Widgets can be buttons, selection lists, sliders, etc.

**WiFi**

WiFi is short for Wireless Fidelity, and is a term used to describe wireless standards for local network wireless connectivity.

**XHTML**

XHTML is a reworking of HTML 4.0 designed to work as an application of XML. It allows anyone to create sets of markup tags for new purposes and provides a foundation for device-independent Web access.

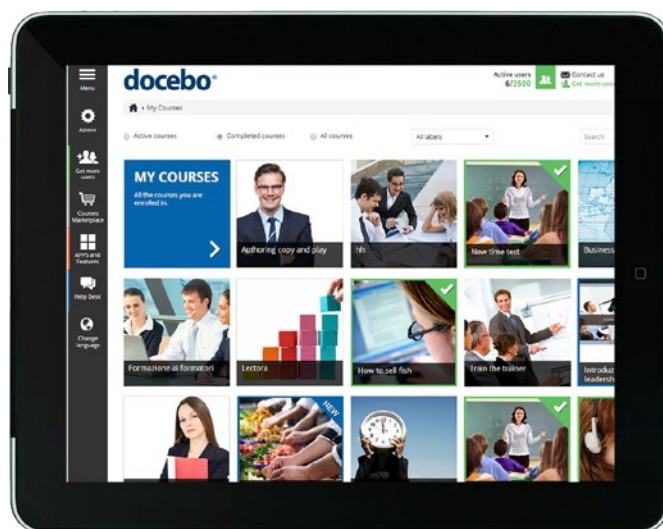


## About Docebo

Docebo (from the Latin “I will teach” and pronounced “Docēbō”) is a pure Cloud Learning Management System (LMS) that over 28,000 organizations have used globally since 2005.

Sold in over 70 countries worldwide and available in over 30 languages, Docebo has been ranked in the world’s Top 10 for SaaS elearning solutions providers, and in the Top 3 for B2B LMSs.

Docebo is generally regarded as one of the industry’s most comprehensive solutions for training management, and has been chosen by some of the world’s most respected companies to achieve operational efficiency.









## About the Docebo LMS

Docebo is a product that was designed to be delivered in SaaS as an ecosystem of features and modules that can be enabled or disabled per customer requirement/s. It is extendable and flexible, with a component based architecture. This unique approach means companies can rapidly extend and scale their solution according to needs. What’s more Docebo can easily be integrated with your existing IT systems (HR, CRM and other preferred platforms) via an API system.

The LMS is very easy to use and has been widely recognized for its user friendly and modern UI, and UX. It manages, delivers and tracks: web based training (WBT), instructor led training (ILT), live distance learning, social learning, blended learning, mobile learning, and gamification.

Also with its Mobile app, Docebo delivers learning at the point of need and on-demand via all devices including mobile and tablet.

## Why Docebo?

	Easy to use LMS with a modern UI
	Manages, delivers and tracks instructor led (ILT) and web-based training (WBT) activities
	Organizations can better train their workforce, channels and clients
	Enterprise Cloud Solution (ECS) option allows the LMS to run on a dedicated Cloud instance
	Available in more than 30 languages
	Robust and extendable in order to meet large sized project requirements



# Docebo Mobile enables your workforce with elearning... anywhere, anytime, on-demand

Enable your workforce with just-in-time training directly from their mobile devices

The Docebo mobile app allows you to attend your Docebo-based elearning courses through your Smartphone, and on any mobile device.

Take courses optimized for Smartphone delivery

Access training content on the go

View progress and reports!

Try a 14-day free trial at [www.docebo.com](http://www.docebo.com)





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**E-Learning Market Trends & Forecast 2014-2016**  
**A Report by Decebo, March 2014**



# E-Learning Market Trends & Forecast 2014 - 2016 Report

A report by Docebo | March 2014

## Foreword

This report, by Docebo, is intended to help any decision maker who needs statements, arguments as well as facts and figures to prove, with real and tangible data, the added value of E-Learning initiatives to stakeholders.

It sets out the results of research analyzing key technology assets for continuous education. It endorses the use of online learning technologies to:

- Keep the workforce appraised of their job functions' developing requirements, enabling them to make a positive impact within their Organization and help that Organization achieve its aims and goals;
- Aid succession planning, helping workers to acquire the knowledge and skills to help them progress within their Organization;

- Allow Organizations to keep training budgets under tighter control, develop and retain existing employees and reduce the costs related to external human resources recruitment, selection and on-boarding.

Docebo, a disruptive Cloud E-Learning solutions provider with over 28,000 customers worldwide and an international partner network in more than 26 countries, welcomes the opportunity to further the conversation with you. Please contact us to learn more about how an integrated learning management system can empower your employees to greater effectiveness.



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## Executive summary

The current speed of change means that employees need to be trained continuously in order for Companies to avoid the dangers of being out-thought and out-maneuvered by competitors. These training initiatives (incorporating individual and group training activities) need to be monitored and managed via a consistent and reliable tracking system that can be stored, consulted and analyzed as required. The system's data will be useful for management reports on productivity and for assessing individuals' career advancement.

This system of Training management -- often referred to as a learning management system (LMS) -- is a key element of an effective professional development plan as well as being a key element of an Organization's human resources strategy.

There seems to be universal agreement that the worldwide E-Learning market will show fast and significant growth over the next three years. The worldwide market for Self-Paced E-Learning reached \$35.6 billion in 2011. The five-year compound annual growth rate is estimated at around 7.6% so revenues should reach some \$51.5 billion by 2016. While the aggregate growth rate is 7.6%, several world regions appear to have significantly higher growth rates. According to recent regional studies, the highest growth rate is in Asia at 17.3%, followed by Eastern Europe, Africa, and Latin America at 16.9%, 15.2%, and 14.6%, respectively.

Each of the world's regions has its idiosyncrasies In terms of the factors that drive this market. The U.S. and Western Europe markets are the most mature. The U.S.A. spent more on Self-Paced E-Learning than anywhere else in the world. Western Europe is the world's second largest buying region

for E-Learning products and services but Asia is predicted to outspend Western Europe in E-Learning terms by 2016. In 2012, Bersin & Associates stated that there were some 500 providers in the LMS market and only five of them have more than a 4% market share. According to this, the LMS market was expected to reach \$1.9 billion in 2013. However the growth exceeded expectations, closing the year at \$2.55 billion.

The Cloud is changing the way Organizations, Employees and Partners interact and collaborate. Within the Cloud solutions universe, Software-as-a-Service (SaaS) is playing a major role. According to Gartner, SaaS will continue to experience healthy growth through 2014 and 2015, when worldwide revenue is projected to reach around \$22 billion. Gartner has stated that many Enterprises are now replacing their legacy systems with SaaS-based CRM systems. Enterprise clients also report that SaaS-based CRM systems are delivering new applications that deliver complementary functions which are not possible with older, legacy CRM platforms.

Various surveys and analyses into the reasons behind this big growth in SaaS agree on at least three. SaaS brings:

- Speed of implementation
- Savings on capital expenditures
- Savings in terms of operational expenses

The SaaS model is also playing a major role in helping to increase the size of the E-Learning market. Small and Medium-sized Enterprises (SMEs), as well as large Corporations are making the adoption of a SaaS LMS a key priority. In particular, large Corporations are switching to



a SaaS LMS from in-house LMS solutions or they are now using a SaaS LMS as a secondary learning system for special training purposes.

E-Learning is subjected to the influences of sales trends related to smart connected devices and the Internet megatrend (that is, the spread of the Internet in the world).

According to IDC, the number of PCs will fall from 28.7% of the device market in 2013 to 13% in 2017. Tablets will increase from 11.8% in 2013 to 16.5% by 2017, and smartphones will increase from 59.5% to 70.5%.

The new frontier to address is the trend towards Bring Your Own Device (BYOD) -- where individuals take their personal (usually mobile) devices to workplaces. Increasingly, these seem to be being used to help their owners perform work activities (including formal training), both in and out of the workplace. Smartphones are the most common examples of these devices but employees often also use their tablets or laptops in the workplace.

While the corporate-training market has lagged behind other education-based sectors, it continues to represent a viable investment opportunity.

The corporate-training market is among the most cyclical within the education industry. Since 2010, employers' total spending on training and the amount spent per employee -- the key data used to measure this sector -- have been declining. However, the corporate market related to outsourced services (net of all ancillary costs) has grown to reach 42% of total expenditure.

Within the training industry, the E-Learning sector has grown consistently in recent years. All its subsectors (Packaged Content, Platform, and Authoring tools) show positive annual growth. Market acceptance of E-Learning has resulted in its increased use for both large and small companies. SaaS/Cloud E-Learning solutions are particularly suitable for Organizations ranging from SMEs to large institutions.

General budget constraints appear to be the main drivers of the shift towards using E-Learning. However, E-Learning is not merely a solution which is attractive during an economic downturn but it is also an efficient and cost-effective solution when workers -- especially those in Organizations with a widely geographically distributed workforce -- need to be brought up-to-speed quickly on relevant knowledge and skills.

K-12 and post-secondary are two key sectors of the educational market. One of the key characteristics of the education sector is its large base of potential users. Importantly, each of these users may start in the K-12 or post-secondary markets but they have the potential to also become future users of vocational training programs. Their involvement in E-Learning projects at the K-12 and post-secondary stages will build a large base of users already accustomed to using such technologies in order to learn.

With the inflow of an estimated \$6 billion of venture capital over the past five years, E-Learning is being driven not only by startup dot-com entrepreneurs but also by big corporations, for-profit spin-off ventures, as well as big and small universities.

## Introduction: the strategic role of continuous education

One way to stay on top of a rapidly changing market is to implement a **business strategy** that maximizes the synergies between **lifelong learning** and **workforce productivity**.

Without appropriate technological support, training programs appear to be less effective. Research has shown that **E-Learning** proves to be an excellent way to achieve quality results in a short timeframe. Online-delivered learning, within a context of continuous education, is considered strategic because it:

- Keeps the workforce appraised of their job functions' developing requirements, enabling them to make a positive impact within their Organization and help that Organization achieve its aims and goals
- Aids succession planning, helping workers to acquire the knowledge and skills to help them progress within their Organization
- Allows Organizations to keep training budgets under tighter control, develop and retain existing employees and reduce the costs related to external human resources recruitment, selection and on-boarding

The current speed of change means that employees need to be trained continuously in order for Companies to avoid the dangers of being out-thought and out-maneuvered by competitors. Thankfully, entrepreneurs, senior executives

and business managers recognize this.

A poorly educated workforce results in decreased, indeed ever decreasing, levels of productivity and reduces their ability to deliver results. Ignorant and poorly skilled staff can't (or at least shouldn't) be promoted -- since they don't have the appropriate skills to help their company reach its business objectives. So Organizations need to go to the expense, in terms of time and trouble, of recruiting staff with new knowledge and competences from outside the organization in order to cover middle and senior level positions.

It's important to realize that not only does this practice have a negative impact on the organization, in terms of high costs per individual worker, but company results show that this approach isn't always successful.

According to recent research (Lifelong Education and Labor Market Needs, published in The EvoLLLution online newspaper) examining the need for continuing education in the workforce, 64% of executives who are recruited externally fail within four years of joining the organization.

Ideally, every company should have a plan in place for each of their employees. This plan should set out **career development** paths and the required **training programs** that will enable the employees to develop the necessary knowledge and skills.

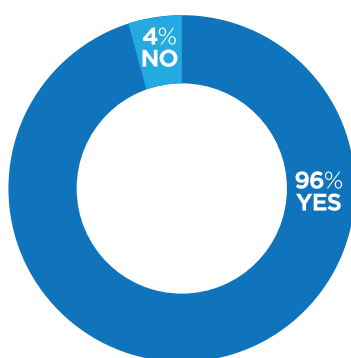
These training initiatives (incorporating individual and group training activities) need to be monitored and managed via a consistent and reliable tracking system that can be stored, consulted and analyzed as required. The system's data will be useful for management reports on productivity and for assessing individuals' career advancement.

This system of **Training management** -- often referred

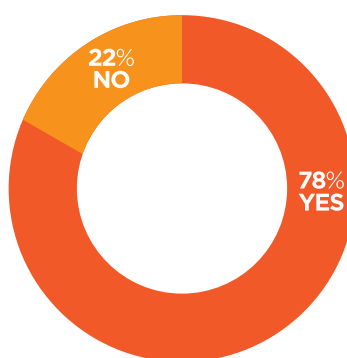
to as a **learning management system (LMS)** -- is a key element of an effective **professional development plan** as well as being a key element of an Organization's human resources strategy.

## Continuous education is considered strategic

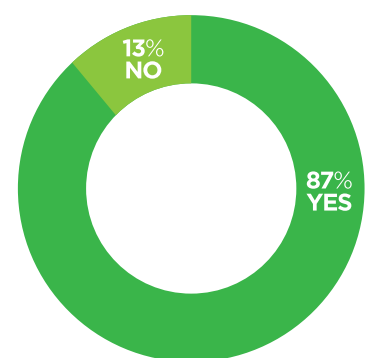
Employers say Ongoing Education has Positive Implications for the Company and the Employee



DOES ONGOING EDUCATION  
HAVE A POSITIVE IMPACT ON  
JOB PERFORMANCE?



DOES ONGOING EDUCATION  
FACTOR INTO PROMOTION  
AND ADVANCEMENT?



DOES ONGOING EDUCATION  
AFFECT COMPENSATION  
AND SALARY?

Employers recognize the impact of ongoing education and reward their employees accordingly.

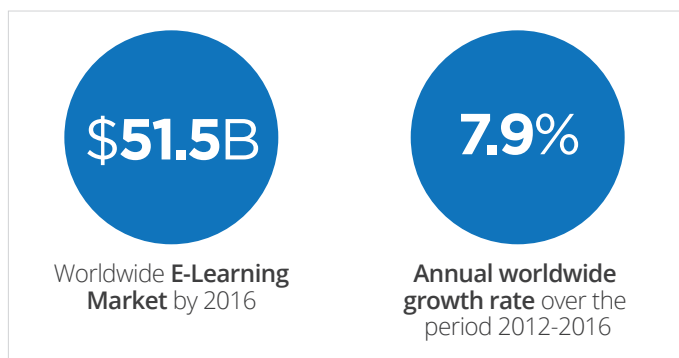
Source: *Lifelong Education and Labor Market Needs, An EvoLLLution Research Report, 2012*

## Growing Global E-Learning Market

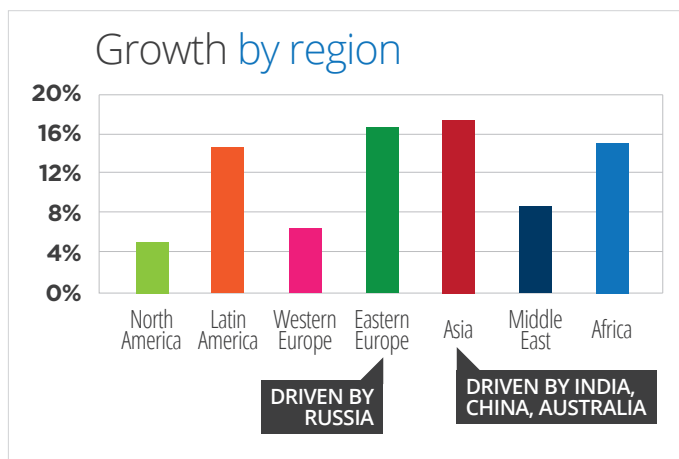
There seems to be universal agreement that the worldwide E-Learning market will show fast and significant growth over the next three years.

The worldwide market for Self-Paced E-Learning reached \$35.6 billion in 2011. The five-year compound annual growth rate is estimated at around 7.6% so revenues should reach some \$51.5 billion by 2016.

A definition of Self-Paced Learning is Education in which learners study at their own pace, without a fixed starting date or regularly scheduled assignment completion dates in common with other students enrolled in the same program. However, there may be a fixed overall completion timeframe.



While the aggregate growth rate is 7.6%, several world regions appear to have significantly higher growth rates. According to recent regional studies, the highest growth rate is in Asia at 17.3%, followed by Eastern Europe, Africa, and Latin America at 16.9%, 15.2%, and 14.6%, respectively.

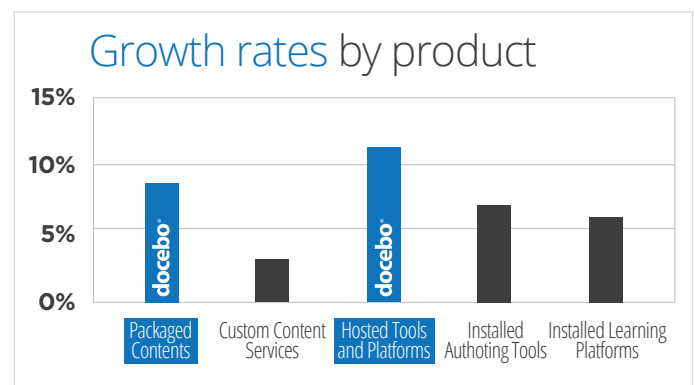


2011-2016 Growth rates by region (Ambient Insight 2012)

The E-Learning market is clearly expanding year-on-year, even though it's difficult to compare market data coming from different sources. For example, if you include the Gaming and Gamification tools within the E-Learning market, then the growth numbers are even more impressive.

Using a "classic" understanding of E-Learning reveals at least three dominant sub-sectors: Content, Authoring tools, and Learning Platforms.

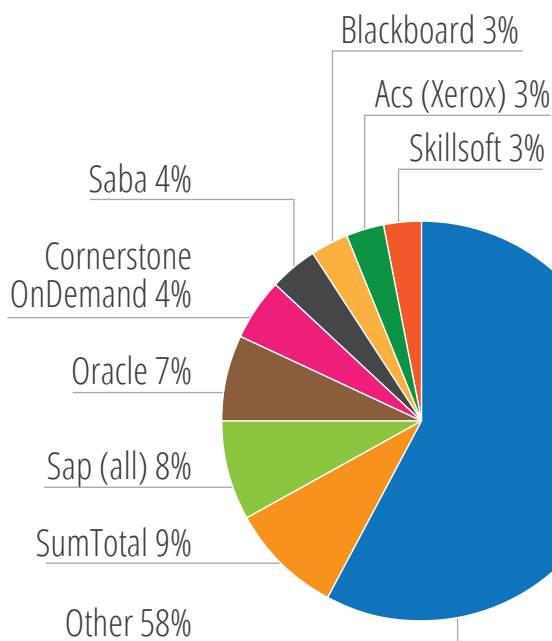
The recent innovations within the technology infrastructure divide the Learning Platform into two business (and technological) models: Hosted and Installed platforms. According to a recent analysis from Ambient Insight, these sub-sectors are expected to grow at different rates:



2011-2016 Growth rates by product (Ambient Insight 2012)

In 2012, Bersin & Associates stated that there were some 500 providers in the LMS market and only five of them have more than a 4% market share.

## 2013 Projected Global LMS Market Share



Source: Bersin & Associates, 2012

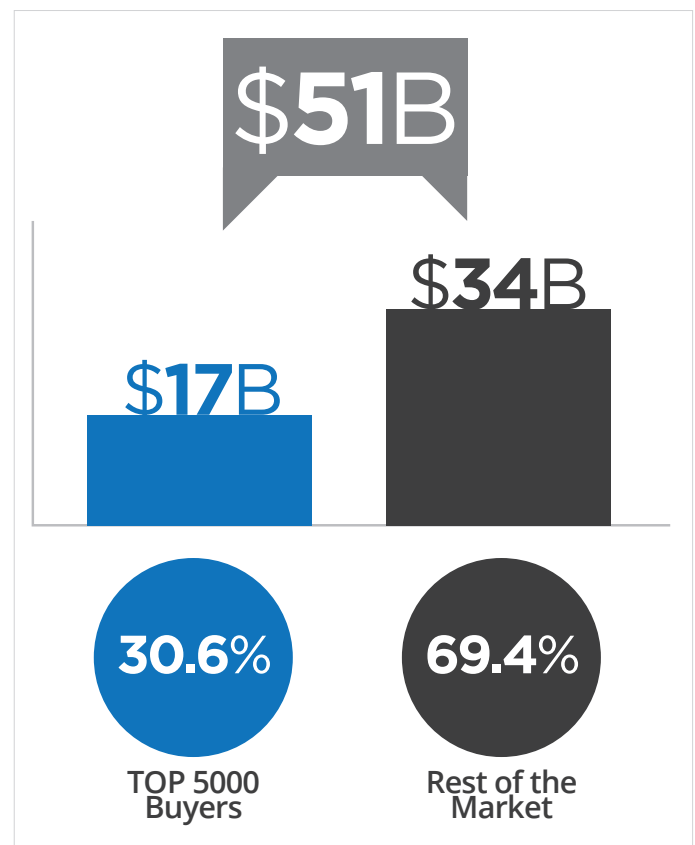
This market share is an overall image of the market. This picture changes significantly if the focus shifts to specific producers and specific market sub-sectors. Moodle, for example, currently has more than 30% of the market in the Education and Government sub-sectors. (SOURCE: E-Learning GUILD RESEARCH)

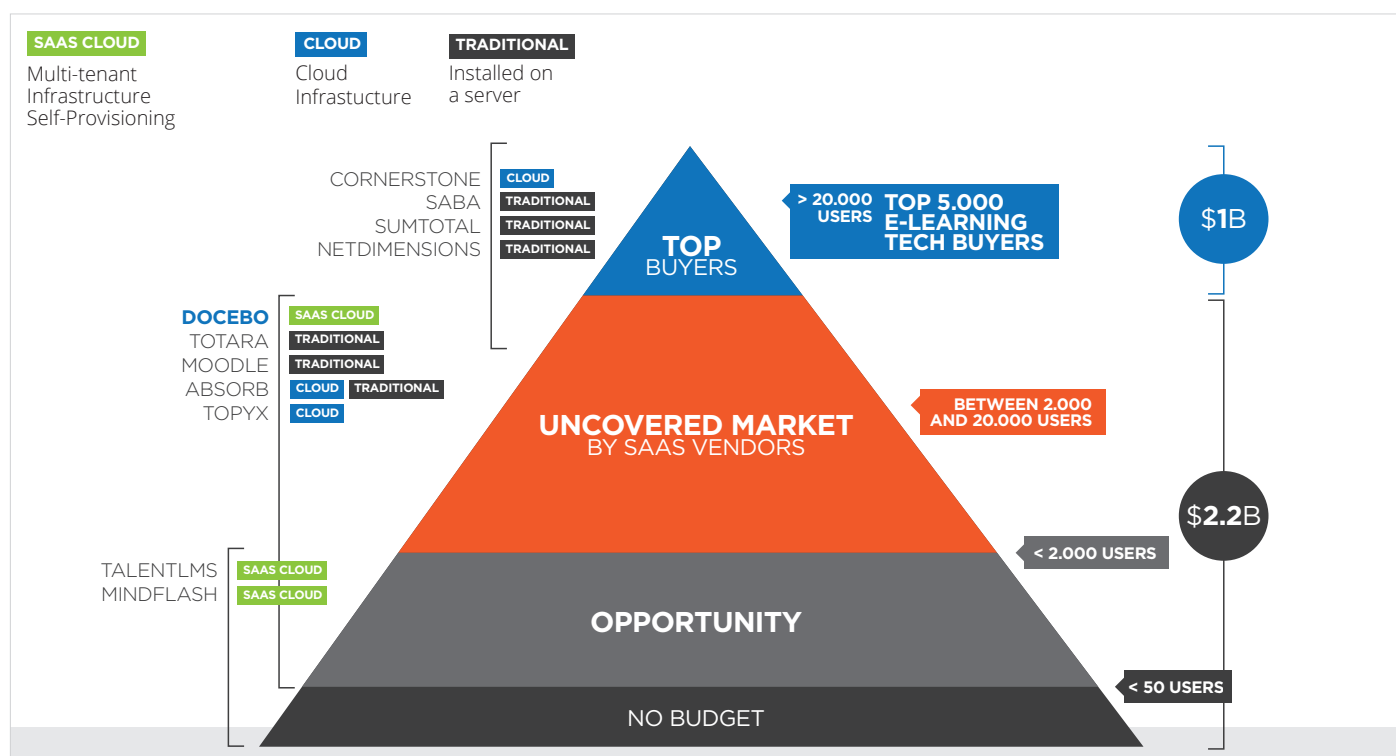
According to the Bersin Industry study, the LMS market was expected to reach \$1.9 billion in 2013. However the growth exceeded expectations, closing the year at \$2.55 billion.

According to Product & Users, the LMS market is expected to experience a growth of 23.17% between 2017 and 2018.

According to Ambient Insight, the packaged content market will reach \$38.3 billion by 2016 (SOURCE: AMBIENT INSIGHT 2012).

According to sources, large and affirmed Companies (such as the Global 5000) are the primary buyers of E-Learning products and services. They account for more than 30% of the E-Learning Market clientele.





A synthesis and analysis of all the available data, results in the following estimated forecasts:

### Total E-Learning Market (LMS + Packaged Content + Other Services)

	2013	2016
<b>Total</b>	<b>40.605</b>	<b>51.172</b>
North America	23.800	27.100
Western Europe	6.800	8.100
Eastern Europe	729	1.200
Asia	7.100	11.500
Middle East	443	560
Africa	333	512
Latin America	1.400	2.200

### Packaged Content

	2013	2016
<b>Total</b>	<b>30.153</b>	<b>38.000</b>
North America	17.674	20.124
Western Europe	5.050	6.015
Eastern Europe	541	891
Asia	5.272	8.540
Middle East	329	416
Africa	247	380
Latin America	1.040	1.634

### LMS Market (covering all the technical solutions available)

	2013	2016
<b>Total</b>	<b>2.550</b>	<b>3.214</b>
North America	1.495	1.702
Western Europe	427	509
Eastern Europe	46	75
Asia	446	722
Middle East	28	35
Africa	21	32
Latin America	88	138

### Other services related to E-Learning activities

	2013	2016
<b>Total</b>	<b>7.902</b>	<b>9.958</b>
North America	4.632	5.274
Western Europe	1.323	1.576
Eastern Europe	142	234
Asia	1.382	2.238
Middle East	86	109
Africa	65	100
Latin America	272	428

## Geographical Insights

Each of the world's regions has its idiosyncrasies In terms of the factors that drive this market. In Asia, for example, Government-funded projects related to literacy development in rural areas are a **major driver to the introduction of E-Learning**.

In the Middle East, governmental interventions play a critical role in the **dissemination of E-Learning material** as educational methods. This is directed not only at students (ranging from those in elementary schools to those on post-graduate programs), but also at employees in the public sector.

In some African countries, private universities are making the difference when it comes to investments. These Institutions

are willing to provide a broad offering to their students in order to help them boost their careers.

In African countries, in general, the introduction of mobile technologies and the use of social networks are major drivers to change. Nonetheless, the most important Change Agent remains the various countries' **Governments** using direct interventions. Facebook and Twitter are used predominantly to support distance learning while VOIP solutions, such as Skype and Google Talk, are becoming popular as well.

The U.S. and Western Europe markets are the most mature, with the biggest instances of E-Learning adoption ranging from K-12 solutions to business-related training.

## The African E-Learning Market

National governments are not the only ones playing a key role in the development of information and communication technologies (ICT) for education. Other sponsors of this trend are international authorities, such as UNESCO, which invests heavily in developing a modern framework for education in the region. Most of these initiatives are vertical, like UNESCO's initiative to disseminate the important role women have played in African history (see: <http://en.unesco.org/womeninafrica/>).

However, the development of a mature E-Learning market in Africa is still restricted by the lack of proper IT infrastructures and connectivity solutions. According to 2012 estimates, Internet penetration in Africa has reached only 15.6%. Although the number of people on whom the internet has an impact is undoubtedly higher, this statistic demonstrates a significant infrastructural disparity between Africa and the other continents. Today, the fast-growing market for mobile devices looks to be the strongest trend that will support the development of E-Learning in Africa.

Over the few next years, various observers believe that we'll see not only an increase in revenues but also the birth of local players within the E-Learning Market. The first MOOC initiative designed by Africans for Africans -- The AMI Virtual Campus is Africa's first free online learning platform for African managers and entrepreneurs -- has already been instigated.

*"Surveys indicate that the African population is willing to engage with new technology-based tools to improve their education and knowledge. However, the continent's infrastructure proves to be a large challenge, undermining the long-term benefits of Internet and Mobile learning strategies. A new mindset is required to adopt 'Cloud' technologies, with African youth pushing favorably towards new learning methodologies that would allow them to catch up with their intercontinental counterparts."*

**Lorenzo Torresin, Technical Director, Allos South Africa.**



The people of Africa seem **willing to engage** with new technologically-based tools to **improve their education, knowledge** and **skills**. However, the continent's infrastructure is proving to be a major challenge and an obstacle to meeting this growing level of demand.

## AFRICA



**\$332.9M**  
2013 Revenues



**15.2%**  
Annual growth rate



**\$512.7M**  
Revenues by 2016

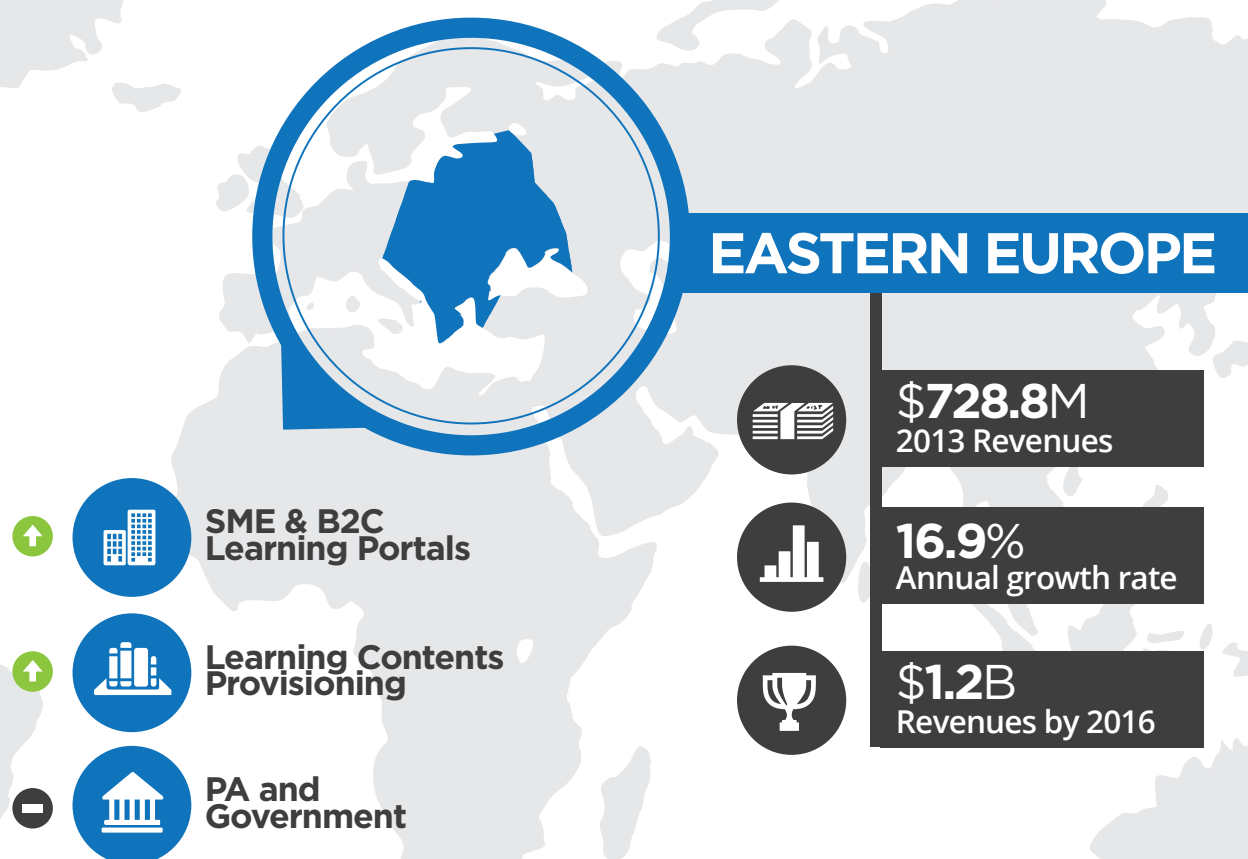
## The Eastern European E-Learning Market

Eastern Europe has the second-highest economic growth rate in the world after Asia (17.3%). In the field of E-Learning, Russia is the country with the highest growth rate and is now considered to be a mature market. The main drivers of this growth are **government investments** (public sector funds) and the presence of **numerous start-ups** that deal with technologies for teaching purposes.

Young Russians' interest in "Western" initiatives on distance and online learning technologies (E-Learning) is extremely strong (both Coursera and Khan Academy are currently widely adopted in Russia), but the market is still affected by public and private investors influencing interest through domestic initiatives (such as the LinguaLeo platform for English language learning, and Rosalind for bio-informatics learning).

*"The Eastern European Market and, above all, the Czech and Slovak E-Learning markets are in a steady situation. The main market innovators are Corporations that buy content for their LMS. Now they are more experienced in using E-Learning software for their internal educational programs and their purchases are more sophisticated and selective. The second most important market segment is represented by learning portals serving SME and B2C, which are growing but numbers are still low. The government segment and public schools are not very active due to budget restrictions and difficulties in realization of EU projects."*

**Jan Miškovský, Business Development Manager, Gopas.**



## The Asian E-Learning Market

Asia has the world's highest regional growth rate for E-Learning, of 17.3%.

Revenues from the sale of E-Learning reached \$5.2 billion in 2011 and are expected to more than double to \$11.5 billion by 2016. The vast majority of these revenues will be generated from the sales of packaged content.

Throughout the whole of Asia, Government-funded projects related to literacy development in rural areas are a major driver to the introduction of E-Learning.

Focusing specifically on the Indian Market, the E-Learning industry in India was valued at INR 18.41 trillion in 2010/2011. Increasing Internet penetration, low-cost existing coverage and rising demand are expected to help this market develop strongly in the near future. The Ken Research Group report, 'India's E-Learning Market Outlook to FY2018 - Increasing Technology Adoption to Drive Future Growth', estimates that the market should grow at a Compound Annual Growth Rate (CAGR) of 17.4% over the period FY2013 to FY2018. The key drivers for this market are:

- Increasing Government initiatives to promote E-Learning
- The growing adoption of technology
- The shortage of quality education, and
- Convenience and affordability factors

With E-Learning being increasingly used to facilitate talent management in corporations, the demand for custom

E-Learning content and technology is likely to increase. This should increase the overall growth rate for India's E-Learning market in the future.

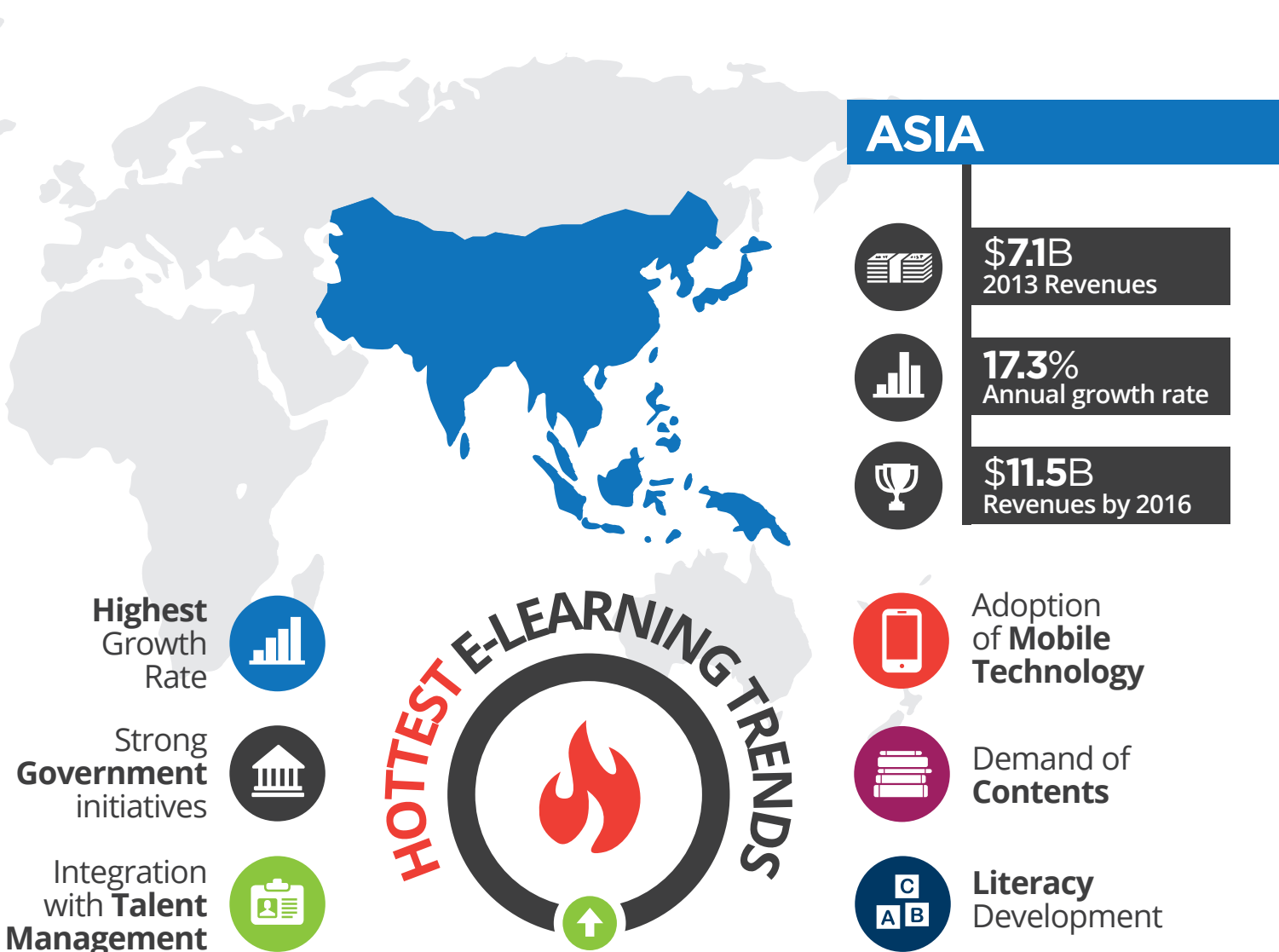
In addition to technology adoption, the Indian E-Learning content market is expected to grow at a CAGR of 18.4% from FY 2014 to FY 2018. The strong Government initiatives pushing student enrolments in higher education and distance learning will keep propelling market expansion at an ever-increasing rate.

The rapid adoption of mobile technology is going to play a major role in the way the entire digital experience is valued and consumed. The mobile ecosystem -- devices, carriers, app markets and so on -- has become the fastest-growing industry ever recorded.

The increasing sales numbers suggest that the growth of smartphones in India allows people greater access to the Internet via mobile devices rather than computers. Unlike a desktop PC or even a laptop, this is an education portal that people can take with them wherever they go. Hence, learning on the go will be the next thing to watch out for and platforms like Docebo, which fully supports mobile access, will continue to perform well as market leaders.

*"The sources used for the construction of quantitative data of the market are Ambient Insight 2012 and ASTD.org"*

**Amol Shinde, Docebo Solution Consultant, India.**



## The North American E-Learning Market

North America is the most mature market for E-Learning in the world. In 2011, the U.S.A. spent **more on Self-Paced E-Learning than anywhere else in the world.**

While the rate of growth in this market may seem low compared with other world regions (at a mere 4.4%), **the revenues generated in this market are extremely high.**

The entire education industry in the U.S. is growing extremely rapidly, and the predictions concerning market growth are encouragingly positive. However, the market is not without its challenges. For example, according to various sources, the K-12 and post-secondary sectors in the U.S. make high demands of suppliers.

*"2013 taught us that the outcome of any learning initiative, whether blended, classroom-based, or fully online must contribute to the Organization's KPIs and decision processes. As a result, designated learning technologies, such as Docebo, must become part of a larger spectrum of systems -- also referred to as an ecosystem -- and be able to integrate seamlessly with different IT legacy systems including ERPs, CRMs, HRIS, SIS, Video-conferencing tools and more. For the adopters, these integrations need to be simple and as much 'plug-and-play' as possible.*

*"Docebo's allowing the use of an open API framework or a pre-built Web Apps marketplace is a response to this critical market*

*need. Meanwhile, in North America, companies like Amazon and Rackspace have become standards in the Cloud business, and are contributing to an enormous acceleration of Cloud-based services adoption.*



*"Thanks to the greater technological maturity trend in 2013 in the learning technologies sector, a boost in the usage rate of videos among our customer base was also evident. Ultimately, this is also consistent with the idea that learning processes need to leverage humanization, and reduce the amount of flat and impersonal PPT decks.*

*"Currently, we're seeing that a great number of North American Organizations are adopting learning technologies that aren't limited to internal training purposes. Both channel and external clients' training initiatives are, nowadays, a must-do.*

*"In this respect, I feel that MOOCs were NOT a bubble but, rather, an academic anticipation of an unsatisfied business need. The need is to be able to leverage internal knowledge, aggregate it professionally in courses and be able to market that to the appropriate segments of target audiences through an LMS with embedded E-commerce capabilities. Turning a cost-driven system like an LMS into a revenue generating system is the trend that I anticipate will have the most impact in 2014."*

**Alessio Artuffo, Chief Operating Officer, Docebo NA**

## TRENDS

- ↑  **Video**  
(More human)
- ↓  **PPT**  
(More impersonal)



ERP  
CRM  
HRIS  
SIS  
VIDEOCONF

E-LEARNING  
ECOSYSTEM



## NORTH AMERICA



**\$23.8B**  
2013 Revenues



**4.4%**  
Annual growth rate



**9.0%**  
Cloud based authoring  
tools and learning  
platforms growth rate



**\$27.1B**  
Revenues by 2016

## TRAINING



ONLINE



CLASSROOM



BLENDED

## CONTRIBUTE TO KPI

## E-COMMERCE PLUGIN

The LMS becomes a  
**Revenue Generating  
System**



## The Western Europe E-Learning Market

Western Europe is the world's second largest buying region for E-Learning products and services after North America.

This is set to change in the upcoming forecasted period. Asia is predicted to outspend Western Europe in E-Learning terms by 2016.

"Despite being a mature market, 2013 was nevertheless a transitional year for E-Learning in Western Europe. We can put aside the buzz about MOOCs in higher education and all the noise about a coming shift to mobile.

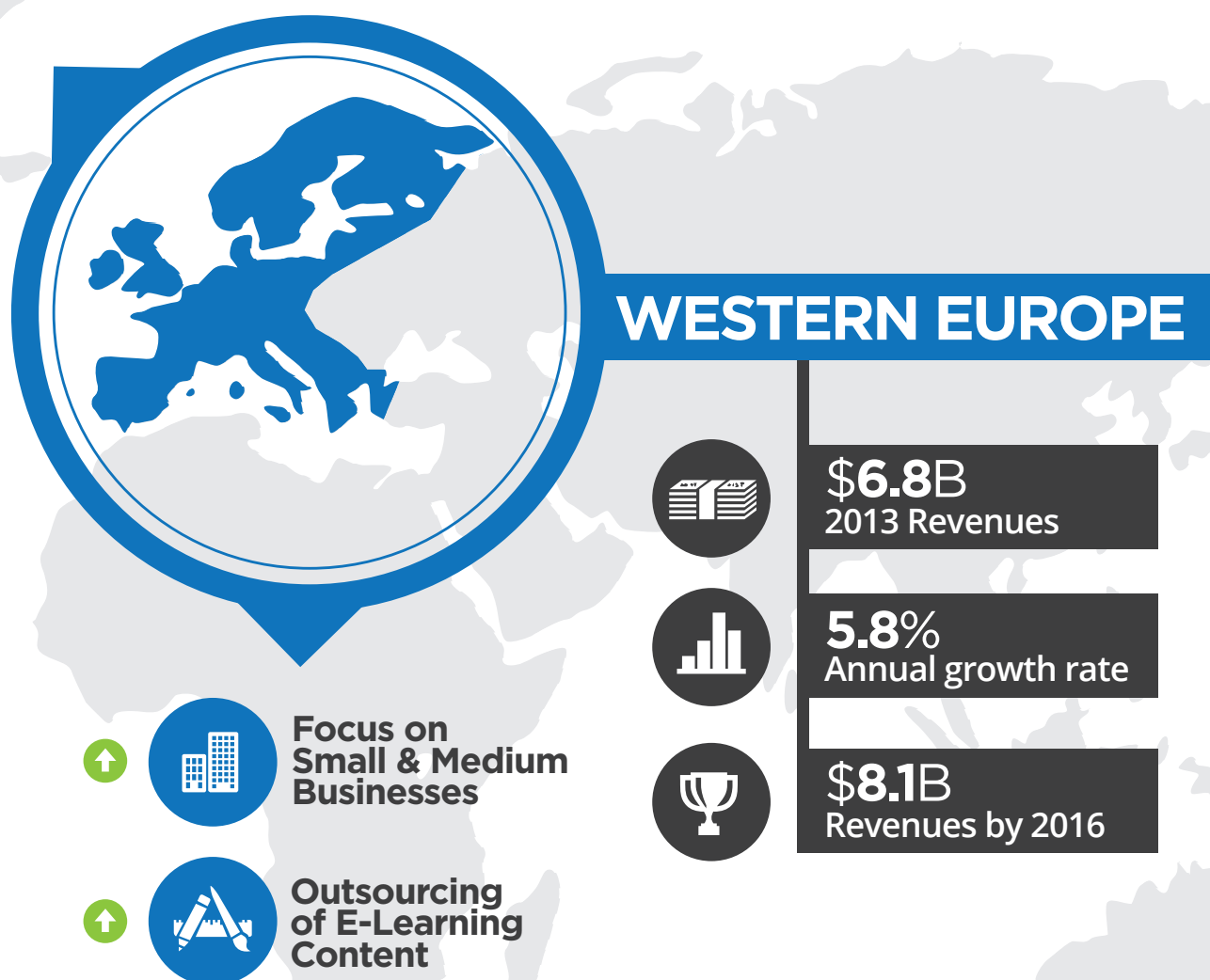
"For those of us who focus on workplace learning, the

interesting shift is the number of small and medium sized businesses that have started to adopt sophisticated learning technologies. With the pricing structure of products such as Docebo, suddenly smaller companies are realizing that there is a very low barrier to entry for them to have enterprise-grade capability in this area.

*"The other trend we've observed, from the larger corporations in our client base, is a shift to outsourcing the development of E-Learning content to professional agencies rather than building in-house. We're excited about the landscape for 2014."*

**Guy McEvoy, Managing Director, Guykat**





## The Latin American E-Learning Market

Sam Adkins, chief research officer at Ambient Insight, has estimated that E-Learning revenues in Latin America will almost double to \$2.29 billion in 2016 from \$1.16 billion in 2011. That's equivalent to an annual growth rate of 14.6%.

In general, as in 2011, Latin America is largely a "consuming" region, importing the majority of its E-Learning content and technology from outside the region. This is likely to change over the forecasted period as domestic suppliers continue to gain market share.

*"Opportunities are arising for suppliers of E-Learning content, hardware, software and services.*

*Governments are handing out laptops to students; private schools are asking their students to bring in their own computers, tablets or other devices, and corporations are rolling out E-Learning platforms for employees to improve their skills.*

*"Brazil will grow fastest at 21.5%, trailed by Colombia at 18.6%, Bolivia at 17.8% and Chile, at 14.4%.*

*"While schools are the major buyers in Brazil, corporations dominate E-Learning in Argentina, consumers do so in Chile, and governments do so in Colombia, Mexico and Venezuela.*

*"The forecast for the next three years is that big foreign suppliers will dominate the E-Learning business in Latin America. This includes these foreign companies buying domestic suppliers in order to gain market share. In the larger markets (Argentina, Brazil, Mexico and Venezuela) the international suppliers will find themselves slugging it out in terms of price in order to sustain sales. The alternative for the smaller suppliers will be to focus on smaller regions (such as Colombia, Chile or Bolivia) and offering tailored solutions that fit the specific customers' needs.*

*"A growth in Content-as-a-Service (CaaS) and School-as-a-Service (SaaS) solutions is also expected, following the latest trends in the United States."*

**Jordi Fernàndez, Business Director, Enzyme**

## LATIN AMERICA



**\$1.4B**  
2013 Revenues



**14.6%**  
Annual growth rate



**\$2.2B**  
Revenues by 2016



**BRAZIL**  
SCHOOLS



**ARGENTINA**  
CORPORATIONS



**CHILE**  
CONSUMERS



**COLOMBIA,  
MEXICO, VENEZUELA**  
GOVERNMENT

### GROWTH OF E-LEARNING FOR PROVIDERS OF



**E-LEARNING  
CONTENT**



**HARDWARE**



**SOFTWARE**



**SERVICES**

### PLAYERS



**GOVERNMENT**  
LAPTOPS



**PRIVATE SCHOOLS**  
COMPUTERS & TABLETS



**CORPORATIONS**  
LMSs

### TRENDS

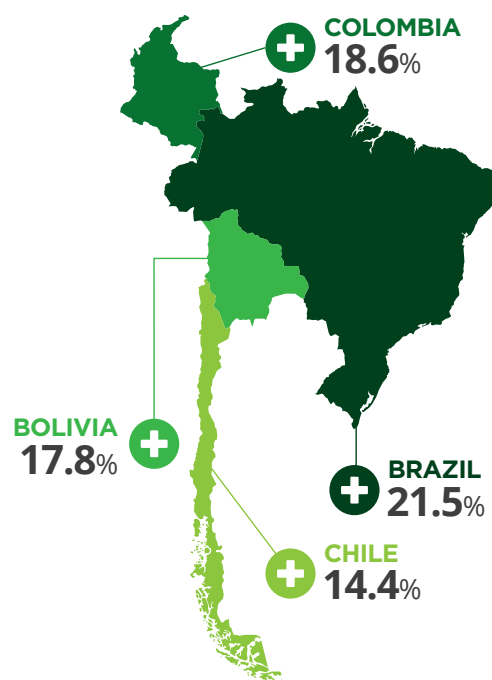


**SaaS**  
(School as a Service)



**CaaS**  
(Content as a Service)

### FASTEST GROWING AREAS



## The Middle Eastern E-Learning Market

The Middle Eastern E-Learning market is growing rapidly due to market makers, such as Governments, Private Schools and Corporations. This infographic relates to 2013 E-Learning revenues, the market annual growth rate and the forecasts for revenues in 2016.

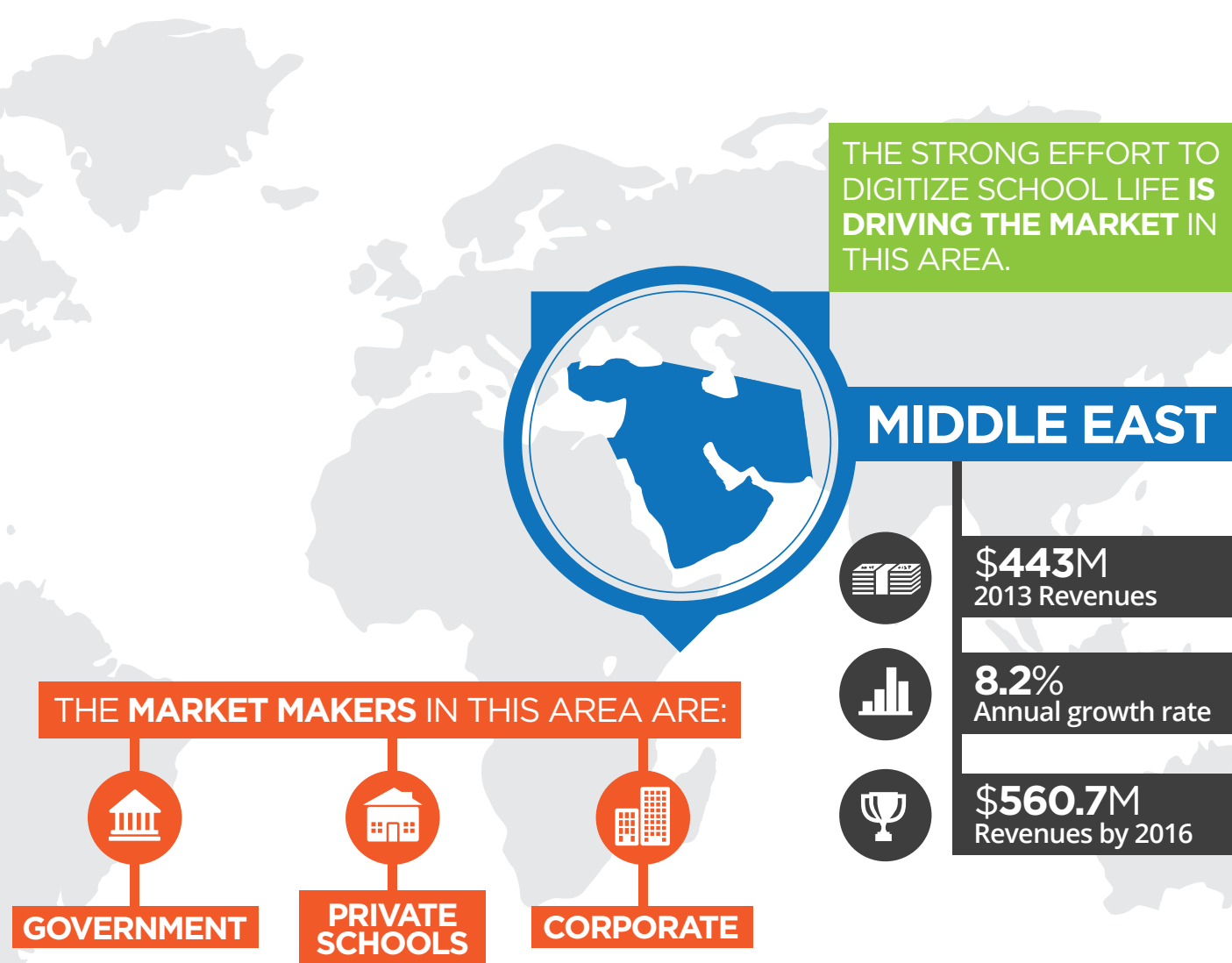
Oman is the top performer in E-Learning terms for the rankings that cover the Middle East. Oman has the highest growth rate in the region at 19.6%, followed by Lebanon (16.0%), Turkey (12.9%), Kuwait (12.6%) and Qatar (11.3%). This is mainly because the Government of Oman is interested in issues relating to education and computer literacy and, consequently, is investing heavily in the sector.

For example, Sultan Qaboos University (SQU) regularly

provides professional development workshops for its staff. This acquaints them with E-Learning technology from an educator's perspective. To date, over 200 staff have attended such workshops. In addition, almost as many regular courses have some E-Learning content included.

*"Middle Eastern Governments are strongly committed to promoting a Mass Digitalization process. This means that heavy investments are being made in this initiative. This is especially true for Soft Skills training. This is designed to quickly and competitively improve the workforce. Is compliance training in this region the next "big thing"? Time will tell, but lots of regulations are already coming..."*

**Claudio Erba, CEO & Founder, Docebo**



## The Game Changers

The **Cloud** is changing the way Organizations, Employees and Partners interact and collaborate. Using Cloud technology facilitates greater collaboration and increases Organizations' efficiency and effectiveness.

Within the Cloud solutions universe, Software-as-a-Service (SaaS) is playing a major role. The top four cloud computing-related projects on which enterprises are currently working are: Internal Private Cloud (35%), Cloud Provider Assessments/Strategy Planning (33%), Infrastructure-as-a-Service (IaaS) (31%) and SaaS (30%).

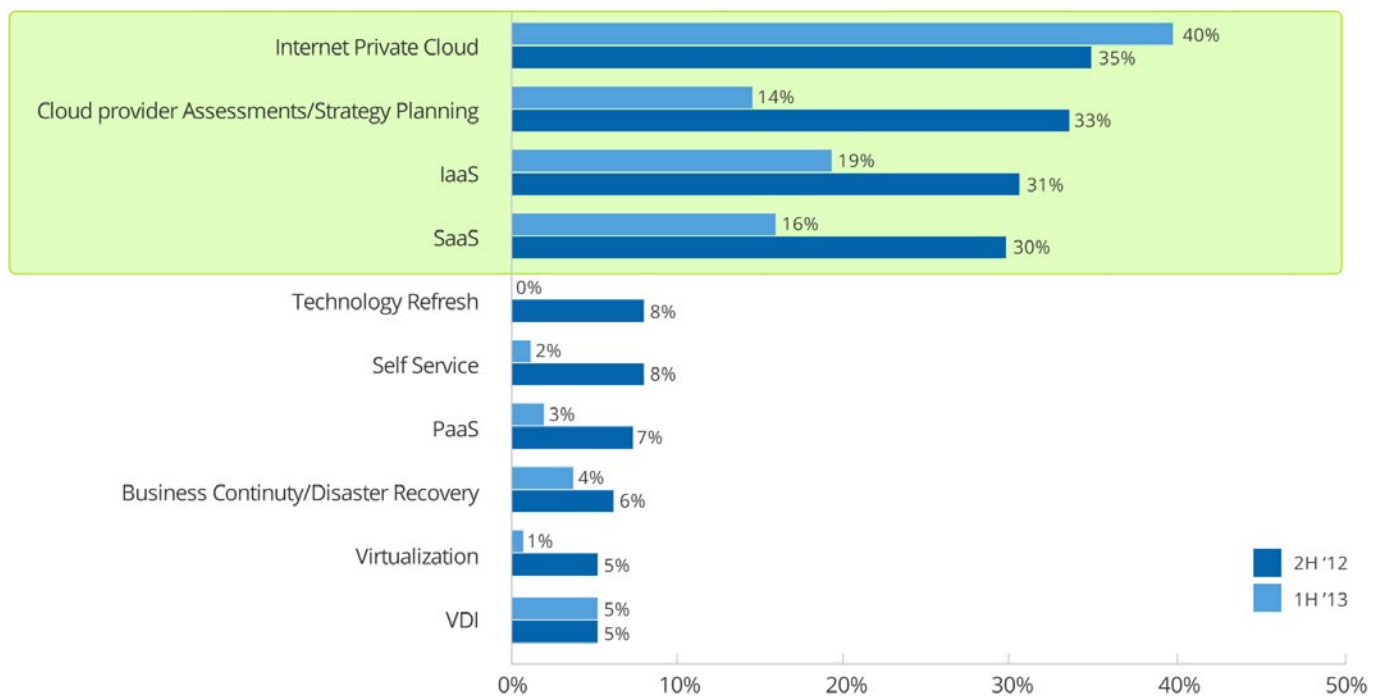
According to Gartner, SaaS will continue to experience healthy growth through 2014 and 2015, when worldwide revenue is projected to reach around \$22 billion.

While there are many options available in terms of SaaS applications for enterprises, across the entire business spectrum, Siemer currently identifies three types in particular:

- **CRM SaaS:** CRM SaaS is, by, far the most requested application across enterprises worldwide. 40% of all CRM software sold in 2012 worldwide was SaaS-based.

### Cloud-related Projects - Time Series of Top Categories

What are your organization's cloud computing-related projects in the next 12 months?\*



Source: TheInfoPro Wave 5 Cloud Computing Study

- **Enterprise Resource Planning SaaS:** The SaaS Enterprise Resource Planning (ERP) market is dominated by SAP and Oracle, which command 25% and 13% of the market respectively. However, there are other vendors operating in the field and these are expected to continue to make progress over the coming years.
- **Human Resources Management SaaS:** Human Resources Management (HRM) SaaS manages all areas of HR activity in a Cloud-computing environment within a market that is currently worth US\$ 10 billion and is growing at a rate of between 18% and 22% every year.

Gartner has stated that many Enterprises are now replacing their legacy systems with SaaS-based CRM systems. Enterprise clients also report that SaaS-based CRM systems are delivering new applications that deliver complementary functions which are not possible with older, legacy CRM platforms.

Various surveys and analyses into the reasons behind this big growth in SaaS agree on at least three. SaaS brings:

- Speed of implementation
- Savings on capital expenditures
- Savings in terms of operational expenses

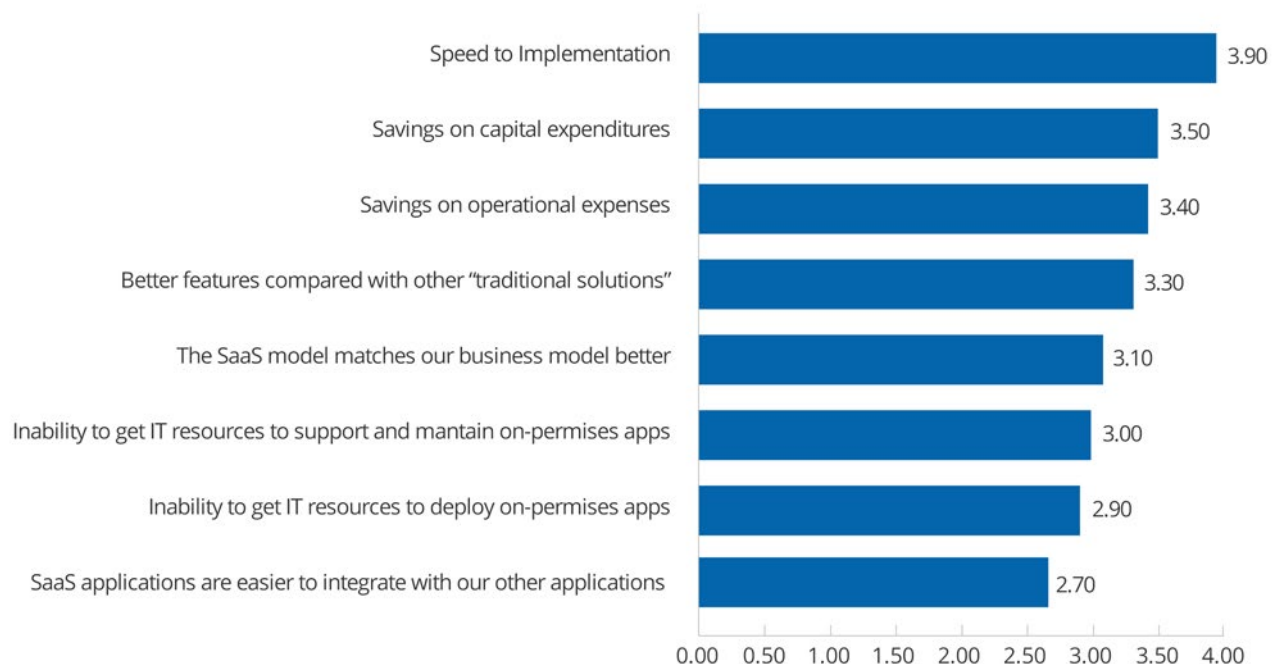
The SaaS model is also playing a major role in helping to increase the size of the E-Learning market. Small and Medium-sized Enterprises (SMEs), as well as large Corporations are making the adoption of a SaaS LMS a key priority. In particular, large Corporations are switching to a SaaS LMS from in-house LMS solutions or they are now using a SaaS LMS as a secondary learning system for special training purposes.

The E-Learning market can still be considered a “niche” segment within different HR macro segments. In particular, E-Learning is subjected to the influences of sales trends related to **smart connected devices** and the **Internet megatrend** (that is, the spread of the Internet in the world).

This report has already mentioned the close link that E-Learning has with the broader Educational market. In addition, there are links between E-Learning and the current growth of **digital publishing** (self-publishing and e-textbooks). However, the digital publishing market is not -- as yet -- greatly affecting the E-Learning market.

Smartphone devices are now generally considered to be valuable assets that help improve work productivity.

### What drove your move to a SaaS Model?



Source: Information Week Analytics SaaS Survey

Recent research has shown, for example, that smartphone owning U.S. workers are considered “more productive” on the global scale. On average, 59% of U.S. workers work more than 50 hours a week -- and they say that they frequently rely on their smartphones as productivity tools (or performance enhancing aids) during their working week.

These figures about employees’ behavior correlate with smartphone sales data.

According to IDC, the number of PCs will fall from 28.7% of the device market in 2013 to 13% in 2017. Tablets will increase from 11.8% in 2013 to 16.5% by 2017, and smartphones will increase from 59.5% to 70.5%.

Interestingly, a Forrester forecast claims that 18% of tablet sales will come from business buyers rather than these tablets being bought for personal use.

This sales data makes the Mobile Learning sector increasingly interesting -- especially so since, in the last two years, Mobile Learning has overwhelmingly been affirmed as a new:  
Popular choice as a method of learning delivery  
Business opportunity  
Strategy for human resource management

The new frontier to address is the trend towards Bring Your Own Device (BYOD). At present this is a slow trend but it's one that is likely to be ongoing for some time.

BYOD refers to individuals taking their personal devices to workplaces. These are usually mobile devices. Increasingly, they seem to be being used to help their owners perform work activities (including formal training), both in and out of the workplace. Smartphones are the most common examples of these devices but employees often also use their tablets or laptops in the workplace.

It's also important not to overlook the Internet megatrend, especially since E-Learning is a part of this megatrend. The Internet opens doors to new learning technologies. This is confirmed by the following data:

### Households with a computer per 100 inhabitants

2012	2008	2005	
75.5	66.1	55.5	<b>Developed nations</b>
27.6	19.6	14.6	<b>Developing nations</b>
40.7	32.6	26.2	<b>World</b>

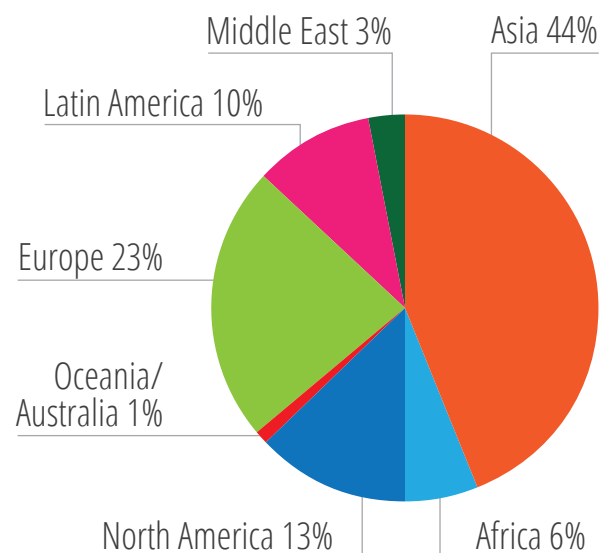
### Households with Internet access at home per 100 inhabitants

2013	2008	2005	
77.5	57.7	44.7	<b>Developed nations</b>
28.0	12.5	8.1	<b>Developing nations</b>
41.3	25.0	18.4	<b>World</b>

Source: ITU (International Telecommunication Union)

As the following image illustrates, Asia is driving this trend.

### Internet Users Distribution by Region



Source: Internet World Stats, March 2011

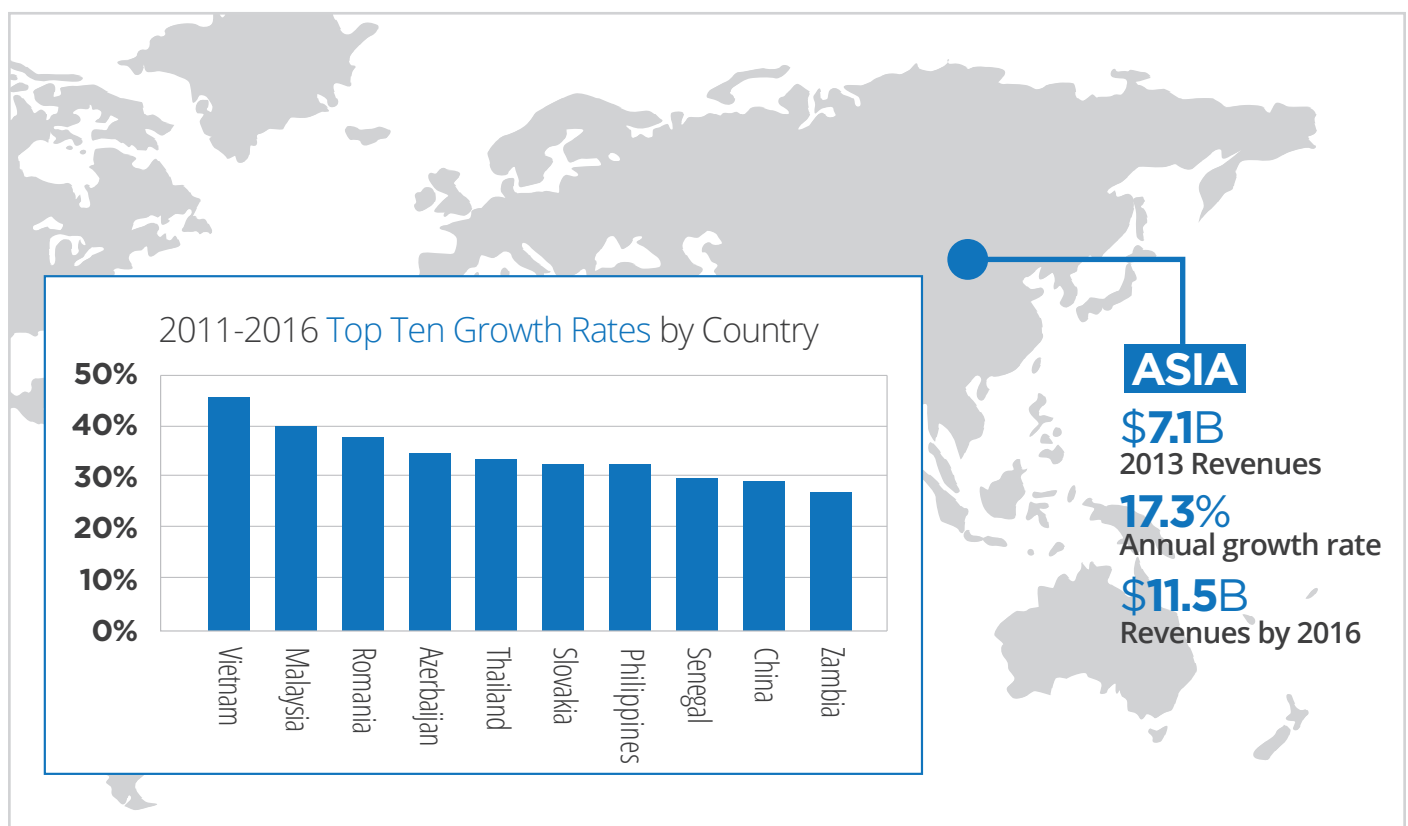
The internet megatrend enables people to exchange and create increasingly more information and is also an important source of knowledge building and sharing. The internet also opens the doors to new learning technologies, systems and methods.



However, when it comes specifically to E-Learning, the countries with the highest growth rates that are driving the bulk of the growth in this segment are not in Asia.

According to Ambient Insight, the growth rates in nine of these countries is above 30%. This is more than four times the worldwide aggregate growth rate.

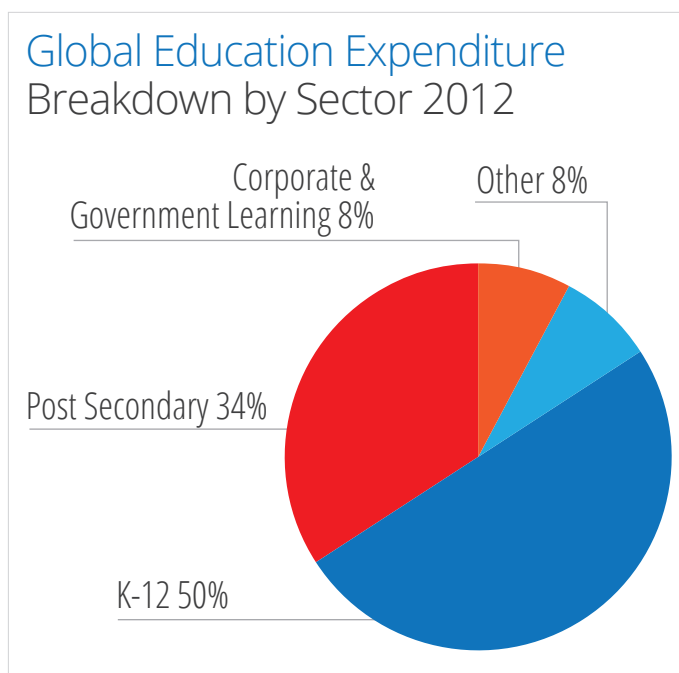
#### 2011-2016 Top Ten Self-paced E-Learning Five-year Growth Rates by Country across all product types



Ambient Insight 2012

## The Corporate-Training Market

While the corporate-training market has lagged behind other education-based sectors, it continues to represent a viable investment opportunity.



The **Corporate-training market** is among the most cyclical within the education industry. This industry experienced a low point during the period 2009 to 2010. Since 2010, employers' total spending on training and the amount spent per employee -- the key data used to measure this sector -- have been declining. It's also important to note that the size of this market is generally calculated to include corporate spending on facilities, salaries and overheads. In addition, there is often no distinction between in-house sourcing and outsourcing of the E-Learning resources.

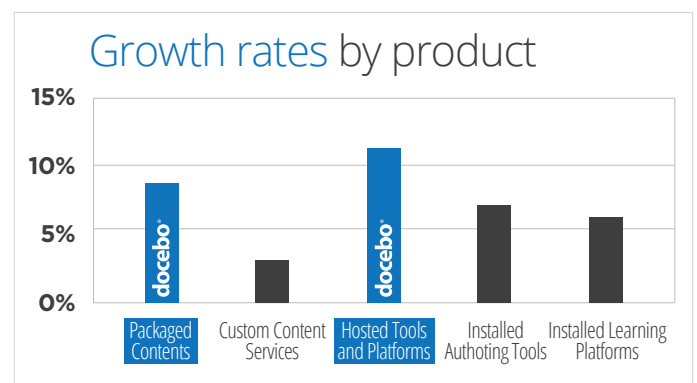
In recent years, most of these assets have been drastically cut within Organizations (when considering all training services). Nevertheless, according to most observers, the corporate market related to outsourced services (net of all

ancillary costs) has not stopped growing in recent years. Indeed, the percentage of outsourced services has grown to reach 42% of total expenditure.

### Training budget



Within the training industry, the E-Learning sector has grown consistently in recent years. All its subsectors (Packaged Content, Platform, and Authoring tools) show positive annual growth. **E-Learning platforms** are leading the market -- especially those using the "hosted" formula. In second place are content-ready courses available for immediate E-Learning delivery.



While these statistics relate to the overall market, it's important to recognize the difference in buying patterns in different countries. This is crucial when analyzing the nature of the buyers -- for example, differentiating between buyers in private companies and educational institutions.

In non-mature markets, especially where the educational component is dominant in E-Learning (including workforce

training projects rolled out at a national level), the main area of focus is **foreign language knowledge**. In these markets, the most interesting recent trend is the shift from a pure consumer market, in which the majority of the content is imported from abroad (from the more mature markets), to a market where domestic suppliers have started gaining market share.

In mature markets, **large companies are making the most impact** despite the long buying cycle. They can be early adopters since their content and related training programs cover such subjects as Management, Compliance and IT, as well as specific industry-related courses.

According to ASTD, Organizations are becoming more demanding when it comes to training and, specifically, more innovative methods such as E-Learning. Although the number of learning hours used per employee doesn't show linear growth, in the long-term it has generally increased -- as has the average percentage of formal learning hours conducted using technology-based models. Interestingly, award-winning Organizations, which tend to be numbered among the world's top companies, are seen as the most demanding in terms of training systems. They are also much more open to embarking on E-Learning projects.

depth of this impact strongly depends on the company's industry. It is not surprising that the technology sector, for example, places a great deal of emphasis on innovative training, and views success in this industry as being highly dependent on properly trained employees.

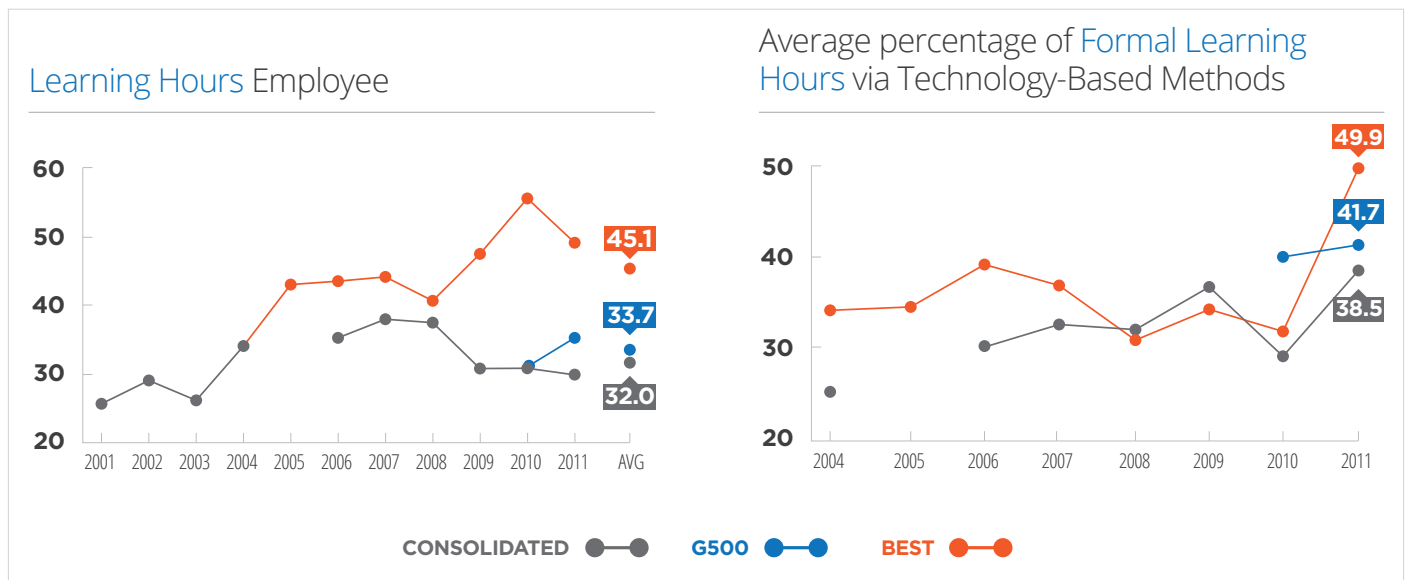
Simultaneously, E-Learning penetration in corporations is increasing, regardless of the company's size.

Since class-based training is more expensive, proportionately, for small and medium-sized firms, these firms are increasingly recognizing E-Learning as being convenient and cost-effective.

The direct training expenditure per employee in 2010 (in the U.S. Market) was, for companies with:

- Fewer than 500 employees: \$1,605
- 500 to 9,999 employees: \$1,102
- More than 10,000 employees: \$825

When training is mostly delivered in person, firms with more than 10,000 employees spend less while reaching more, owing to the scale-based savings involved.



SOURCE: ASTD.org

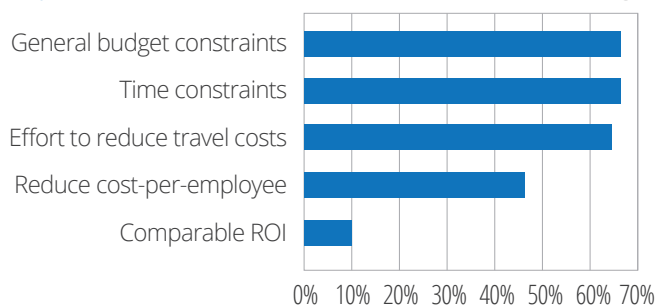
BEST: award-winning Organizations

G500: companies recognized in Fortune magazine's Global 500

The heart of this topic is that education has positive implications for both the company and the employee. The

This data changes completely when training is delivered through E-Learning projects. Market acceptance of E-Learning has resulted in its increased use for both large and small companies. SaaS/Cloud E-Learning solutions are particularly suitable for Organizations ranging from SMEs to large institutions.

### Top Drivers of Shift to Tech-based Learning



Source: Novations Group

General budget constraints appear to be the main drivers of the shift towards using E-Learning. Efforts to reduce travel costs and reduce the cost of training per employee point to key economic benefits arising from using E-Learning materials. However, there is another key driver: E-Learning tackles time constraints. In other words, E-Learning is not merely a solution which is attractive during an economic downturn but it is also an efficient and cost-effective solution when workers -- especially those in Organizations with a widely geographically distributed workforce -- need to be brought up-to-speed quickly on relevant knowledge and skills.

*"For any franchise agency, training is the main tool through which we deliver specific technical skills that are needed to undertake a specific activity, respecting the operating procedures adopted by the entire group. In addition, at Solo Affitti, where specialization and a highly qualified network is a part of our mission, training represents an added asset, a moment of growth, and an opportunity to professionally prepare our network. People's knowledge and skills are the most important assets for a company that wants to be both competitive, and successful. To increase and retain our "intellectual capital", we need to invest in every single agent and ensure that every single agency of*

*Solo Affitti's network is recognized for its professionalism and reliability by the local communities."*

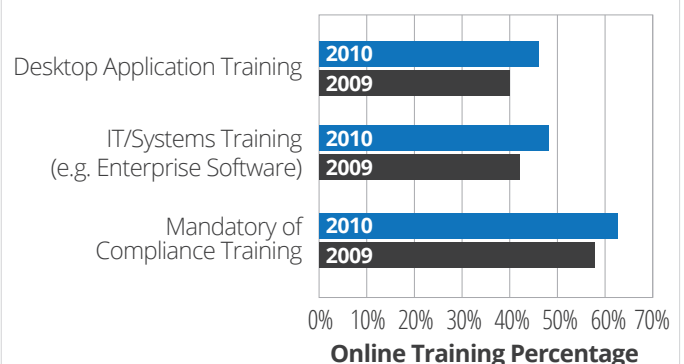
**Silvia Spronelli Vicini, General Manager, Solo Affitti spa**

*"Through cooperation and joint development of E-Learning programs we can secure a uniform practice in all our five trusts. In addition, we now get documentation of all internally run training. E-Learning will gain importance when we strive towards more systematic forms of training and competency development for our professionals. In the long-term, E-Learning will be used to build quality in our hospital trusts".*

**Hilde Rolandsen, Northern Norway Regional Health Authority (Helse Nord RHF)**

Where Content is concerned it's important to note that, within Corporations, the adoption of E-Learning tends to be consolidated in specific subject matter. Today, Compliance Training is the area where E-Learning is most widely adopted. More than 50% of training-related Compliance is now delivered online.

### Online Training Modality as % of Total (2009 & 2010)



Source: Training Magazine

## K-12 Market

K-12 and post-secondary are two key sectors of the educational market. These sectors regularly attract a great deal of analytical attention from both private companies and governmental institutions.

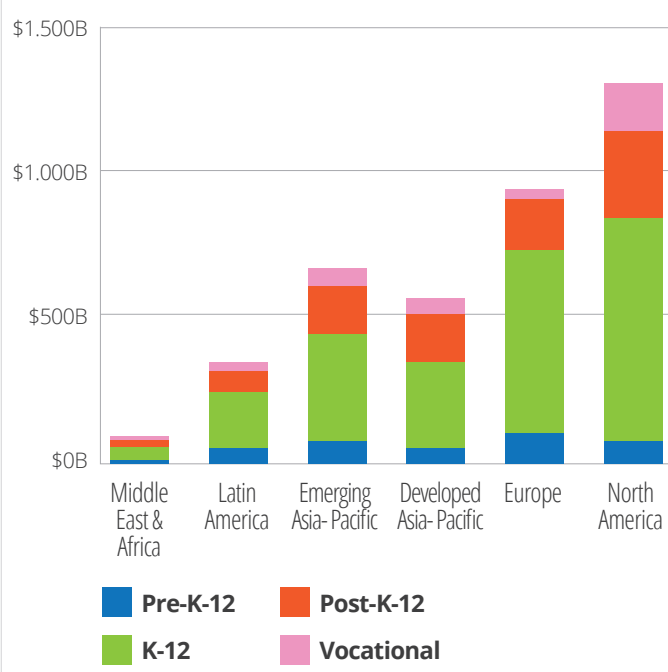
This report focuses on data related to E-Learning, a subsector within the education market.

One of the key characteristics of the education sector is its large base of potential users. Importantly, each of these users may start in the K-12 or post-secondary markets but they have the potential to also become future users of vocational training programs.

Their involvement in E-Learning projects at the K-12 and post-secondary stages will build a large base of users already accustomed to using such technologies in order to learn.

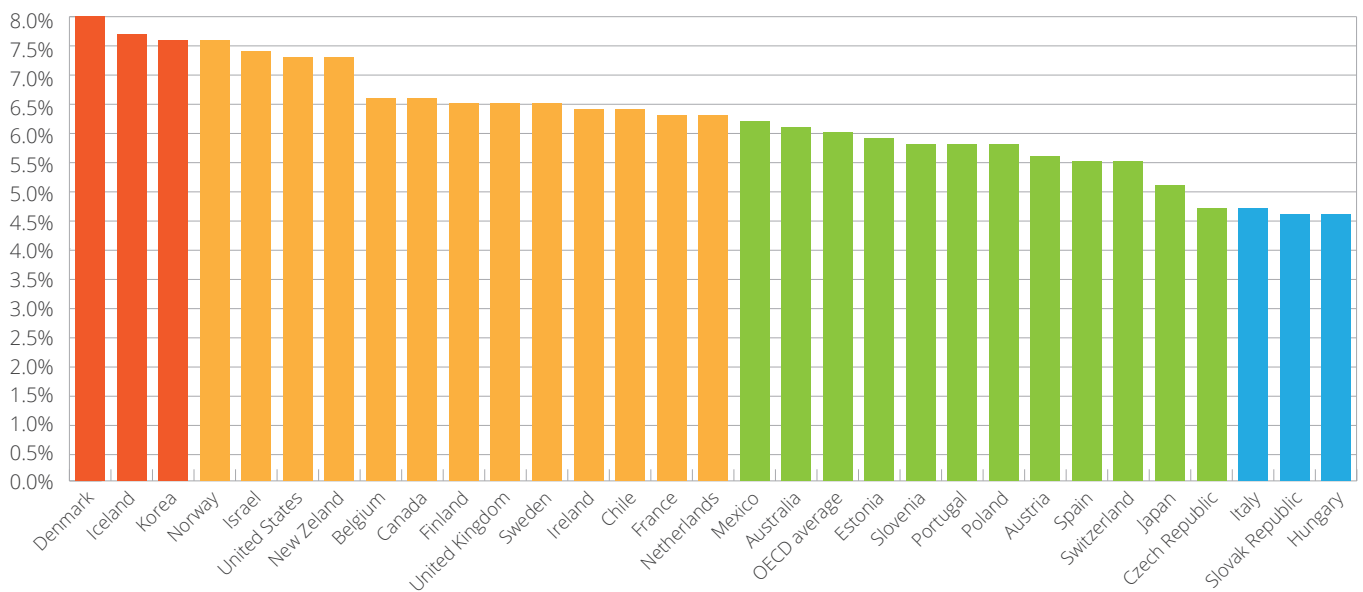
Figures relating to the worldwide education expenditure and expenditure on education as a percentage of GDP illustrate the size of this market and help explain the significance of the K-12 and post-secondary sectors in the education market.

2011 A Global Education Expenditure by Geography



IBIS Capital Market "Global E-Learning investment review"

## Expenditure on Educational Institutions as a percentage of GDP, all levels of education



Source: OECD Education GPS

K-12 (kindergarten through 12th grade) is the term commonly used for talking about a person's first 13 years of schooling before entering university. It is also used by American multinationals when referring to the educational sector.

The K-12 sector has been the focus of great reform in most countries in the last few years.

The economic crisis has resulted, on one hand, in the revision of current public expenditure on education and, on the other, in the definition of new strategies that build on the relationship between skill acquisition and entering the labor market. Unsurprisingly, therefore, the K-12 sector has been overrun by a wave of modernization that has led to a growing interest in the application of new technologies for educational purposes.

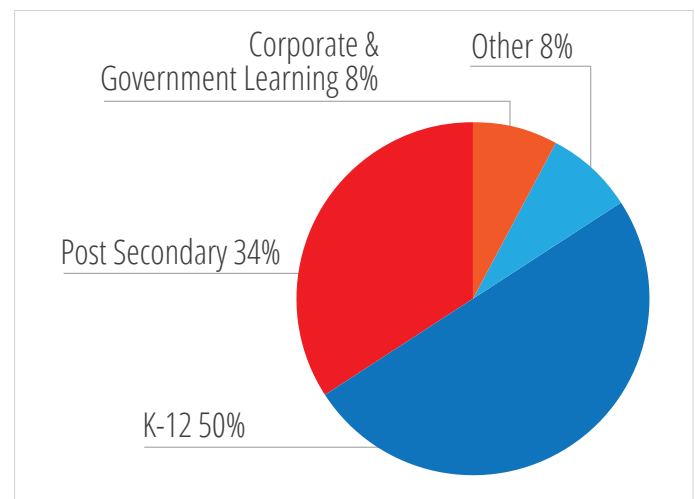
The governmental point of view on the relation between K-12 and technology is summarized in this statement from the European Commission:

*"Today, new technologies offer unprecedented opportunities to make learning more effective, inclusive and engaging. Digital technologies can improve effectiveness of resources through economies of scale, expanding access to a wider number of people (e.g. through MOOCs<sup>28</sup> and other Open Educational Resources (OER)) at lower costs or allowing teachers to focus on what they do best by automating or offloading more routine*

*tasks. ICT can be used to foster more creative and innovative methods of learning (including personalized and collaborative learning), and it has the potential to facilitate collaboration, exchange and access to learning resources."* (SOURCE: EDUCATION AND TRAINING MONITOR 2013)

The K-12 sector includes public education bodies as well as the primary and secondary private education sector (both non-profit and for-profit). Consequently, the digital technologies market for the K-12 sector needs to include products and solutions for digital publishing, such as textbooks, tools for skills assessment and education apps, as well as tools for teachers.

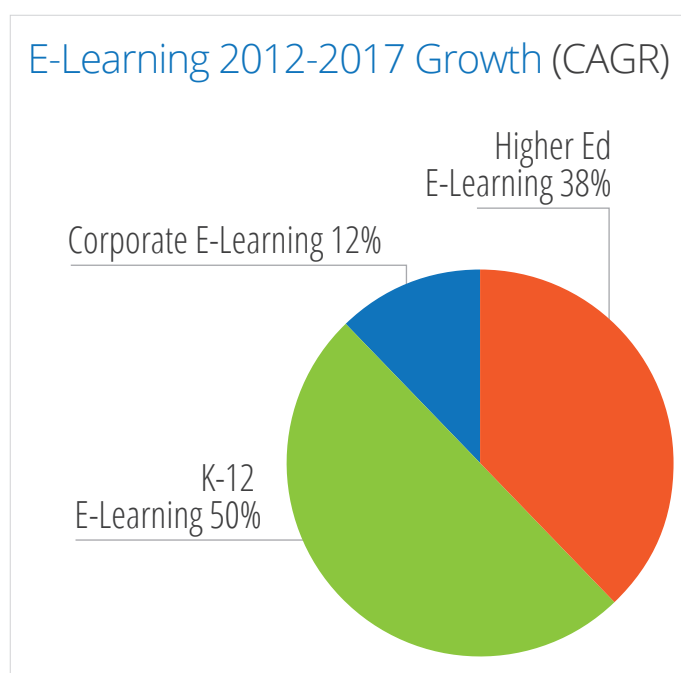
Global Education expenditure has grown consistently in recent years and the K-12 sector plays a big role in this growth.



Focusing purely on distance education and, thus, ignoring the sub-sector of face-to-face education, the K-12 segment continues to represent the largest slice of the market.

Pearson, one of the biggest global players in the education sector, has put education-technology solutions at the center of its growth model. Subsequently, digital revenues, as a percentage of the company's overall revenues, have grown to 33% in 2011 from 20% in 2006 (SOURCE: IBIS CAPITAL).

In addition, GSV Advisors has offered an interesting breakdown of E-Learning sub-sectors by growth rate and projected market size.



SOURCE: GSV ADVISORS

Gamification tools and mobile devices play a major role as market drivers for the K-12 sector. These Gamification tools are particularly appreciated by K-12 teachers and stakeholders, notably because of the mix of skills that can be empowered by "playing" a single or social serious game. Many new and established companies are taking advantage of the opportunity to move into this expanding market which has an estimated growth rate of 37% CAGR by 2020.

According to Tech Crunch, in terms of youth and education App downloads, the time that people spend on mobile apps has already surpassed the time spent on web browsing. Within the K-12 sector, the most used mobile device is the tablet (including both cheap and high quality tablets).

All the players in this market are now rethinking their online offerings in order to be able to offer more on these devices.

It's also important to note that, in the K-12 sector, education technology plays a strategic role in the move from print textbooks to e-books. Due to the increased price of textbook, schools are quickly adopting different solutions. This means not only creating e-books (both paid-for and downloaded), but also providing easy access to e-books (renting without ownership).

However, the anticipated boom of e-book sales didn't happen in the past year. The newest trend is the scouting for an environment that can host e-books, as a sort of Learning Management System with a library of books.

## The Post-secondary Market

In their tenth annual survey on the state of U.S.-based online higher education, The Babson Survey Research Group reported that 6.7 million students enrolled in at least one online course during the fall 2011 term. That is nearly one-third of all students currently enrolled in some sort of higher education in the U.S.A.

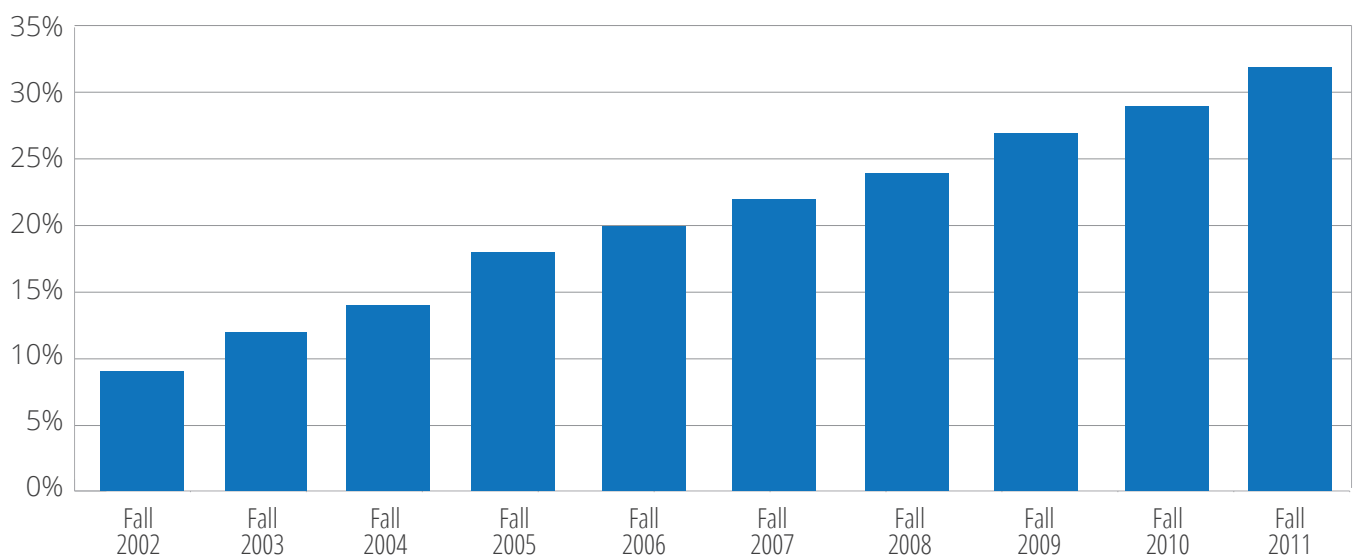
So, students are enrolling in online courses.

training is equally effective as, or more effective than, face-to-face training.

- Online training is considered strategically beneficial for students' flexibility.

While it's difficult to reach similar conclusions for Western Europe, the world's second most mature market, it's safe to assume that the growth rate in this sub-sector in this region is currently slower than in the U.S.

Online Enrollment as a percent of Total Enrollment: Fall 2002 - Fall 2011



SOURCE: BABSON SURVEY RESEARCH

This post-secondary / higher education market is a key target for Massive Open Online Courses (MOOCs) or similar initiatives. The first providers in this field, Coursera-Udacity and edX, cover college or university level courses with no cost for enrollment. Nevertheless, in mature markets, specifically in the U.S. market, online courses are delivered from Universities, or similar institutions, to their students as well as to external users.

According to The Babson Survey Research Group - Learning on demand, in the U.S. post-secondary market:

- Online courses are considered critical for the long-term strategy of the institution
- Institutions' acceptance of the value of E-Learning is growing globally
- Academic leaders are starting to believe that online

According to recent Eurostat Data, the number of individuals in 28 EU countries who used the Internet to seek information with the purpose of learning, remained the same between 2009 and 2012. Nonetheless, there are few countries, such as Finland, where the use of the Internet for purpose of learning has grown significantly over this period.

### Individuals using the Internet for seeking information with the purpose of learning

% of individuals aged 16 to 74

	2007	2008	2009	2010
EU (28 Countries)	23	27	32	32
EU (27 Countries)	23	27	32	32
Euro Area (Changing composition)	25	29	34	34

SOURCE: EUROSTAT DATA



The European education and training system is starting to embed digital technologies in its training methodologies, but full acceptance of the use of these technologies in learning still appears to be far off. Governmental surveys show that 70% of teachers in the EU recognize the importance of training in ICT-supported pedagogies, but their role in the development of a fully digitalized school is still weak. According to the European Commission, only around 30% of students in the EU are in digitally supported schools and as many as 35% of students are in schools which exhibit both weak policy and weak support for digital technology.

A different scenario seems set to emerge in the UK. The UK Government and other institutions are playing a big role in the creation of a cultural background that is encouraging rapid growth in the market for digital technology in education. The UK Government's Online Learning Task

Force (which includes experts from Microsoft, Apple and Pearson) recommended an investment of £100 million in online education in order to help the nation build its brand, develop better online educational resources and become a major international player in the distance learning market.

In Asia, India is putting a lot of effort into becoming a mature market for higher distance education. Economic concerns and the current high cost of tuition fees are at the heart of India's keenness to become the most relevant player in the Asian E-Learning market for higher education.

In addition, in the Asian region, China is taking steps to create good quality distance education programs. This is chiefly due to China experiencing increased demand for highly trained members of its workforce, in order to compete effectively in global markets.

## Venture Capital in Education

With the inflow of an estimated \$6 billion of venture capital over the past five years, E-Learning is being driven not only by startup dot-com entrepreneurs but also by big corporations, for-profit spin-off ventures, as well as big and small universities.

2012 saw a boom in E-Learning technology investment. One of the largest ever investments in this sector took place in September that year when Desire2Learn, a developer of an LMS, received \$80 million.

According to Ambient Insight, since 2012, the investment in educational technology ("edtech") has taken two different routes: investment in K-12 and pre-K-12 start-ups, and investment in corporate-oriented businesses.

Many universities entered the E-Learning marketplace using non-profit models, leveraging their knowledge of the traditional classroom and applying this to the E-Learning environment. In particular, the MOOC market has grown vigorously.

Not only is there a proliferation of courses, there is now an expansion of MOOC platform providers and tools. Today, there are more than 2 billion potential learners around the world. More than 70% of these are, reportedly, unable to afford a college degree. Yet, today, possessing a college degree appears to be more important than ever. McKinsey believes that college-educated workers will have a three-fold advantage in salaries and opportunities by 2020.

According to Josh Bersin, the Founder and Principal at Bersin by Deloitte: *"While this is still a young market, the demand is there and we expect it to grow exponentially in the coming years."* This market contains different business models, encompassing a wide spectrum of approaches. For example, there are **The Disruptive Businesses** (free-open access distribution) and the Education Giants (paid distribution) models.

**According to Forbes, there are several "disruptive" players in the education market: Coursera, Udacity, Udemy and so on.** All these players are running MOOCs initiatives. Some are completely free, while others charge basic fees to students.

**edX** is a joint venture by MIT and Harvard to offer their courses online to a worldwide audience, for free. The courses are not for credit, but the plan is to eventually award certificates of completion to students. The site launched in the fall of 2012.

**Udacity** is an online education platform founded by Sebastian Thrun, David Stavens, and Mike Sokolsky. The site currently offers 14 courses focusing on computer science, math, entrepreneurship and more. Over 100,000 students have enrolled on their courses globally.

**Coursera** is a free online education platform that features over 200 courses from 33 universities worldwide. The site was launched in April 2012 by Andrew Ng and Daphne Koller, who were Stanford University computer science professors.

**Knewton** is an adaptive learning company that provides personalized web-based instructions on a variety of subjects. It was founded in 2008 by Jose Ferriera.

**Udemy** is an online learning platform where experts teach courses on a variety of subjects. Some courses are free, while others are fee-based, with prices ranging from \$5 to \$250.

**Khan Academy** provides free online education with a wide range of courses. Launched in 2006 by the educator, Salman Khan, the site now contains over 3,400 lectures.

**MITx** will offer a portfolio of MIT courses for free to a virtual community of learners around the world.

**2U** is an education-based tech-company that partners with universities to offer online degrees.

Apple launched **iTunes U** in 2007. The app offers free lectures from universities, museums, libraries and other educational institutions. There are currently more than 75,000 files available for download.

**Code Academy:** A free online site offering lessons on how to code.

### MOOCS

They will soon need a Sales Channel to penetrate the B2B market. A SaaS LMS is the key.

**\$103M** RAISED BY  
LYNDA.COM

**\$16M** RAISED BY  
UDEMY

**\$65M** RAISED BY  
COURSERA

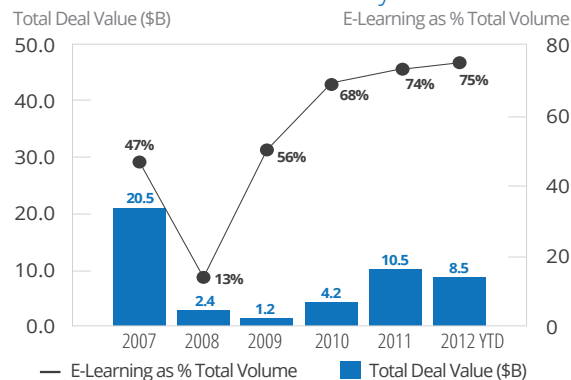
**\$23M** RAISED BY  
UDACITY

The revenues from the big players in the educational field have also grown significantly:

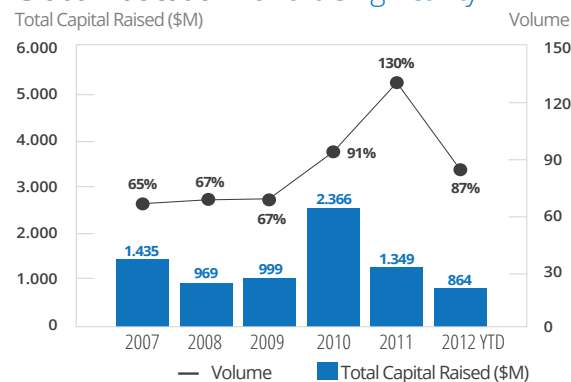
Company	2011 FY (\$B)	2004-2011 CAGR (%)
Pearson	6.9	19.6%
Apollo Group INC.	4.7	14.7%
Benesse	3.7	8.9%
The Washingtonpost Company	2.5	11.7%
Mc Graw Hill	2.3	(0.6%)
Career Education	1.9	3.6%
Cengage Learning	1.9	3.4%
K 12	0.5	32.2%
Blackboard	0.5	25.2%
Capella University	0.4	20.3%
Scholastic	0.2	(6.5%)

Within this wide spectrum, there are a number of local players emerging. According to IBIS Capital, there are **over 3000 E-Learning companies** in Europe alone. Disruptive businesses, education giants and local players are at the center of mergers and acquisitions, as well as transactions and fundraising.

### Global Education M&A Activity



### Global Education Fundraising Activity



IBIS CAPITAL - GLOBAL E-Learning INVESTMENT REVIEW

The Corporate Learning market is also growing and, as such, it is attracting big investments from all over the world. The U.S. is the most active global fundraiser for Education. Europe only accounts for 6% of total fundraising volume. Some examples of deals related to the E-Learning sector are:

### E-Learning top ten M&A Transactions

Since 2011

Target	Acquirer	Target subsector	Transaction Value £m
SuccessFactors	SAP	Management System	3,764
Taleo	Oracle	Management System	1,921
Blackboard	Providence Equity	Management System	1,852
SunGard Higher Education	Datatel	Management System	1,775
Kenexa	IBM	Management System	1,397
EmbanetCompass	Pearson	Management System	650
Renaissance Learning	Permira	Management System	485
Archipelago Learning	PLATO Learning	Management System	366
Deltak edu	John Wiley & Sons	Management System	220
Certiport	Pearson	Management System	140

Source: IBIS Capital Market "Global E-Learning investment review"

### Recent E-Learning Fundraising Across Europe & the US

Target	Investor	Target subsector	Transaction Value \$m
Udemy	Insight Venture Partner, Learn Capital Venture Partners, Lightbank, MHS Capital Partners	Distribution	16.0
Memrise	NA	Distribution	6.2
Udacity	Charles River Ventures, Andreessen Horowitz	Distribution	21.0
Lingualo	Runa Capital	Distribution	3.2
Desire2Learn	NEA, OMERS Ventures	Management System	80.0
Grockit	Atlas Venture, Benchmark Capital, Integral Capital Partners, GSV	Distribution	44.7
Docebo	Principia	Management System	3.0

Source: IBIS Capital Market "Global E-Learning investment review"

Investing in the Distribution sector appears to be highly attractive at present, as investment returns from the Management Systems and Content sectors fall behind. However, thanks to the SaaS business model, the LMS Market has been growing fast so far -- and should continue to grow.

## Two case studies

Here are two case studies about the investments of two giant publishers in E-Learning.

### PEARSON



According to IBIS Capital, since 2007, Pearson has acquired 15 companies. Eleven of them were acquired after 2010 and all of them were digital-based / E-Learning businesses.

Since 2006, Pearson has invested some £2.5 billion in acquisitions. The company has invested across the whole E-Learning environment, including Content, LMS and Analytics.

**eCollege**, a Pearson company that delivers effective interactive learning experiences to students around the world, powers LearningStudio and OpenClass.

LearningStudio is a Cloud-based SaaS LMS that is intended to help institutions achieve their financial and organizational goals. Pearson LearningStudio offers service and support to institutions. In particular, that support includes strategic guidance to improve the quality and efficiency of customers' educational programs. It helps users to develop custom-built solutions involving content, technology and services.

OpenClass is a dynamic learning environment that helps educators bring social learning and experiences to their students. It's open to everyone and free to use. It has applications in Higher Education (especially for Academic Executives) and in Schools, as well as in the Private Sector (for Workforce Education as well as Professional development).

In addition, Pearson runs a number of strategic alliances. These include Cisco Press, a publishing alliance between Cisco Systems and Pearson; IBM press, the official publisher for IBM professionals and academia, and the New York Institute of Finance and Pearson collaborate to serve the financial education sector.

## Pearson's Acquisition Roadmap



IBIS Capital Market "Global E-Learning investment review"

### MACMILLAN

Macmillan Science and Education and Macmillan Publishers are divisions of the Holtzbrinck Publishing Group, a family-owned company based in Germany and one of the world's leading media companies.

Holtzbrinck has three global divisions:

- Macmillan Publishers
- Macmillan Science and Education
- Holtzbrinck Digital, Information and Services

Nature magazine and Nature.com are initiatives of Macmillan Publishers

Macmillan launched Digital Education in 2012 to capture opportunities in the consumer online education markets. Digital Education is a risk-tolerant strategic investor with a

pragmatic approach to co-investment.

It invests (via equity) in Business to Consumer (BtoC) online education products: Veduca and Easyaula (Brazil), Maths Doctor (UK), Tutotira, English.

Digital Science provides software and information to support researchers and research administrators in their everyday work, with the ultimate aim of making science more productive through the use of technology.

It also invests in promising start-ups.

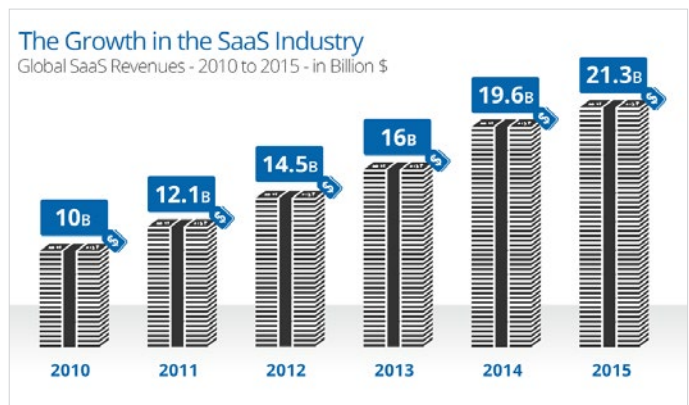
Macmillan Education publishes English Language teaching (ELT) -- including via E-Learning under the **macmillanenglishcampus** name. It also publishes school curriculum, Spanish curriculum, digital and online materials to suit the needs of classrooms around the world.

## Appendix One

### How SaaS growth and adoption is reshaping strategic and organizational models

The Cloud is changing the way Organizations, employees and partners interact and collaborate. Using Cloud technology facilitates greater collaboration and increases Organizations' efficiency and effectiveness.

Within the Cloud solutions universe, Software-as-a-Service (SaaS) is playing a major role. The top four cloud computing-related projects on which enterprises are currently working are: Internal Private Cloud (35%), Cloud Provider Assessments/Strategy Planning (33%), Infrastructure-as-a-Service (IaaS) (31%) and SaaS (30%).

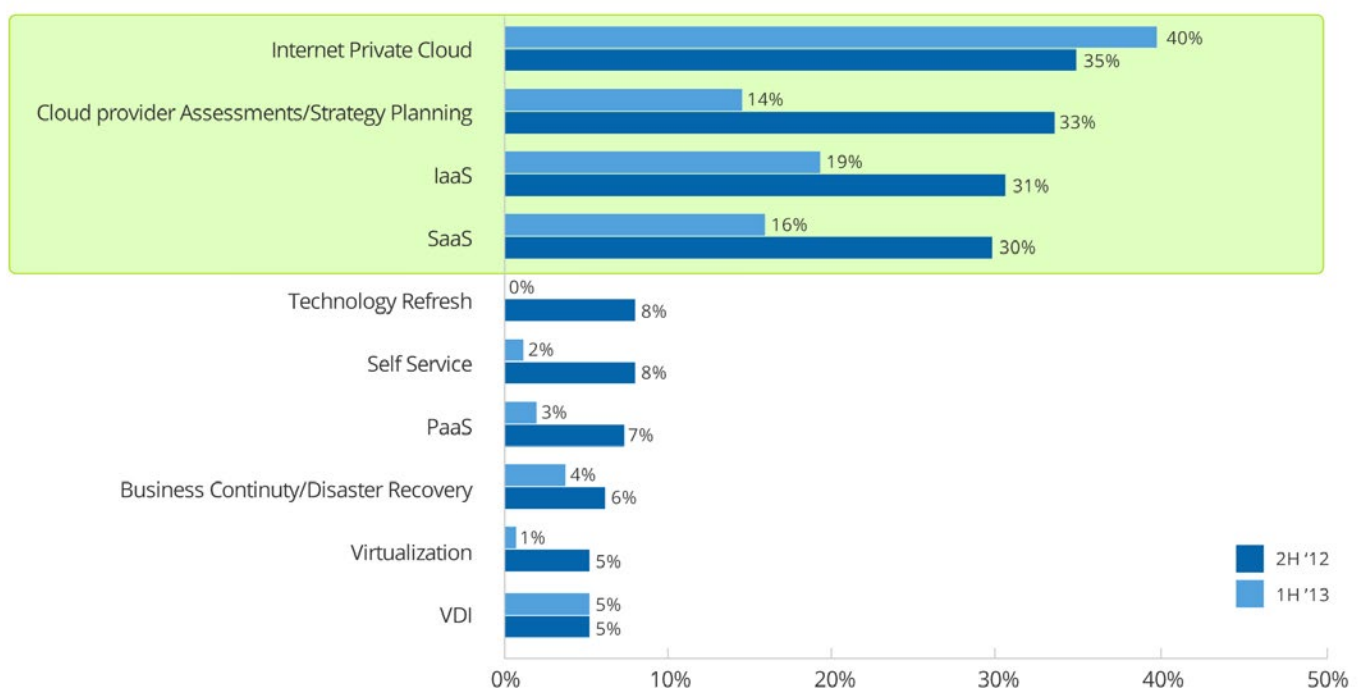


*Summer 2013 SaaS Industry Report from Siemer & Associates*

The Summer 2013 SaaS Industry Report from Siemer & Associates shows that some 60% of the global market volume is currently in the US. The main reason for this is

### Cloud-related Projects - Time Series of Top Categories

What are your organization's cloud computing-related projects in the next 12 months?\*



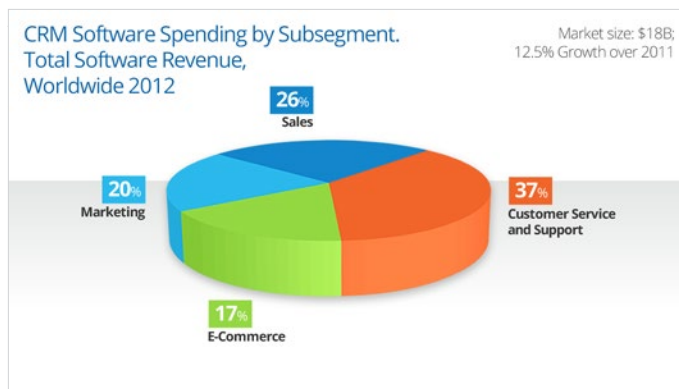
According to Gartner, SaaS will continue to experience healthy growth through 2014 and 2015, when worldwide revenues are projected to reach around \$22 billion.

the lack of cultural barriers in that market. Other nations are significantly lagging in terms of adoption, mainly because of: fear of third-party control, security concern, and a lack of appropriate Internet bandwidth.



While there are many options available in terms of SaaS applications for enterprises, across the entire business spectrum, Siemer currently identifies three types in particular:

- **CRM SaaS:** CRM SaaS is, by far the most requested application across enterprises worldwide. 40% of all CRM software sold in 2012 worldwide was SaaS-based.
- **Enterprise Resource Planning SaaS:** The SaaS Enterprise Resource Planning (ERP) market is dominated by SAP and Oracle, which command 25% and 13% of the market respectively. However, there are other vendors operating in the field and these are expected to continue to make progress over the coming years.
- **Human Resources Management SaaS:** Human Resources Management (HRM) SaaS manages all areas of HR activity in a Cloud-computing environment within a market that is currently worth US\$ 10 billion and is growing at a rate of between 18% and 22% every year.



Source: Gartner

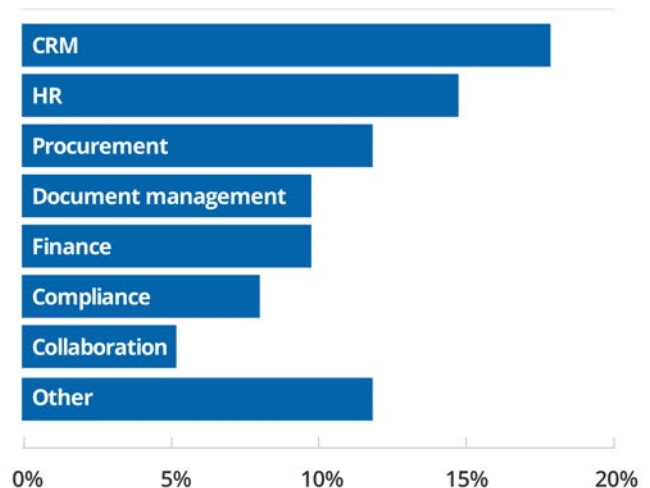
Gartner has stated that many Enterprises are now replacing their legacy systems with SaaS-based CRM systems. Enterprise clients also report that SaaS-based CRM systems are delivering new applications that deliver complementary functions which are not possible with older, legacy CRM platforms.

## SaaS Usage TODAY

The usage of applications delivered as a service fall mainly in three areas: CRM, HR and procurement.

### BY APPLICATION

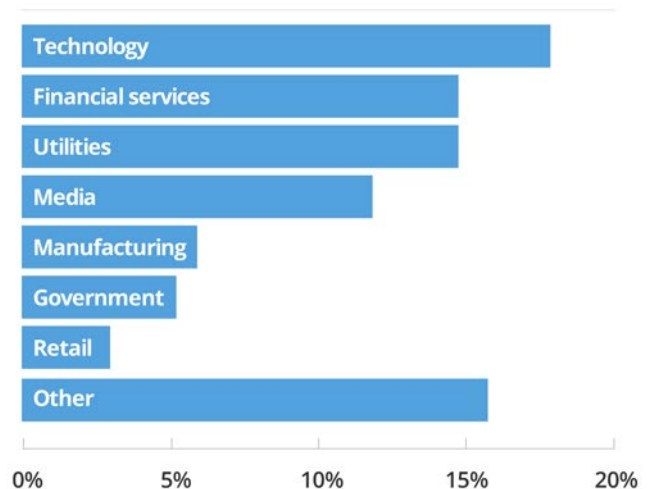
Percentage of applications delivered in a SaaS model



Technology companies are the biggest users of the SaaS model, followed by financial services and utilities

### BY VERTICAL MARKET

Percentage of applications delivered in a SaaS model by industry



Source: Gartner











The biggest users of the SaaS model are technology companies, followed by financial services and utilities. Various surveys and analyses into the reasons behind this big growth in SaaS agree on at least three. SaaS brings:

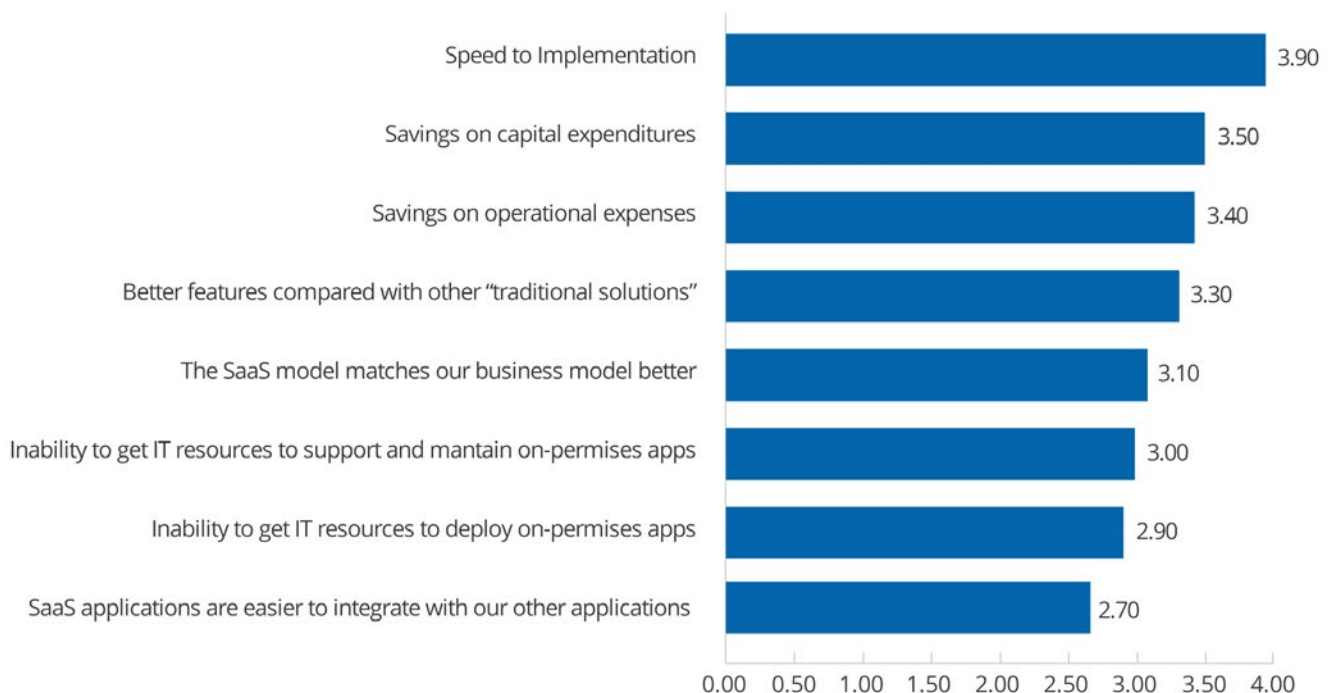
- Speed of implementation
- Savings on capital expenditures
- Savings in terms of operational expense

The SaaS model is also playing a major role in helping to increase the size of the E-Learning market. Small and Medium-sized Enterprises (SMEs), as well as large Corporations are making the adoption of a SaaS LMS a key priority. In particular, large Corporations are switching to a SaaS LMS from in-house LMS solutions or they are now

using a SaaS LMS as a secondary learning system for special training purposes.

Goals		Trends	
BUSINESS	To control training costs	 SaaS	
		 Open Source	
	To get tangible results	 Content Management	
		 Talent Management	
OPERATIONAL	To optimize learning management	 Adaptability	
	To improve learning efficiency	 Accessibility	
		 Individualization	
		 Socialization	

## What drove your move to a SaaS Model?



Source: Information Week Analytics SaaS Survey

## Appendix Two

### Research Method and Credits

This research was developed with information gathered through browsing websites and blogs related to E-Learning, HR software and talent management, along with an analysis of particular reports specific to the industry, notably by Ambient Insight, GSV, IBIS Capital and Tower Watson.

The data was analyzed and further strengthened by the knowledge garnered in the ten years of experience that Docebo has had in the E-Learning market. Docebo also asked its worldwide network of partners to comment on the data that was relevant to their own regions.

You can find all the sources -- errors and omissions excepted -- at the end of the document. Note: we apologize to any authors whose names might be missing from this list, since it has been hard to keep track of all the resources accessed on this lengthy journey of data collection.

The editor of this paper, **Valentina Piccioli**, Docebo E-Learning analyst, will be delighted to discuss, review, quote or help you in moving forward any additional analysis related to E-Learning.

#### Sources:

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and:

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- <http://www.trainingindustry.com/wiki/entries/size-of-training-industry.aspx>
- <http://www.astd.org/Publications/Magazines/TD/TD-Archive/2012/11/ASTD-2012-State-of-the-Industry-Report>
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- [www.forbes.com/sites/louiscolumnbus/2013/09/04/predicting-enterprise-cloud-computing-growth](http://www.forbes.com/sites/louiscolumnbus/2013/09/04/predicting-enterprise-cloud-computing-growth)
- <http://www.informationweek.com/whitepaper/>
- [http://www.cio.com/article/109706/The\\_Truth\\_About\\_Software\\_as\\_a\\_Service\\_SaaS](http://www.cio.com/article/109706/The_Truth_About_Software_as_a_Service_SaaS)



## Company Profile

Docebo is a disruptive Cloud E-Learning solutions provider that is revolutionizing the online training market with its Software as a Service (SaaS) Learning Management System (LMS). Established in 2005, Docebo has over 28,000 installations worldwide, and is sold in more than 65 countries around the world. The Docebo LMS offers an enterprise solution for mid-sized to large organizations. Customers benefit from Docebo solutions thanks to a scalable pricing model, a third party integration (via API), and reliable service available 24/7 to further enhance the user experience.

### Docebo offers

#### SaaS



As a true SaaS (Software as a service) Cloud-based platform, Docebo is not just an E-Learning tool but is especially designed to be delivered in SaaS as an ecosystem of features and modules that can be adapted to any requirement. Docebo offers a Cloud LMS solution with content on 51 servers worldwide so that organizations of all sizes can adopt a fully web-based approach.

#### Flexible pricing plans



Docebo LMS comes with a convenient monthly pricing plan tailored for med-large enterprises and making it a cost-effective investment that leverages the benefits and flexibility of a pure SaaS.

#### Optimal user experience



With its user-friendly HTML5 user interface Docebo provides an optimal user experience on both desktop and mobile learning scenarios.

#### Testing, tracking and reporting



Advanced test engine and course tracking features, combined with a rich offer of default and custom reports enable you to easily monitor and track performance. **Smart reports** unify data from different sources, helping you to measure the effectiveness of learning. Unlike other LMS solutions, users have the flexibility to download everything.

#### Certificates management



Docebo gives the possibility to create, print and digitally sign training certificates. Release and expiration policies can be configured according to the specific needs of your organization

#### App Marketplace



An extensive web APP Marketplace unique to Docebo for advanced customization and extended projects, the marketplace includes: Social Networks (Facebook, LinkedIn, Twitter), Videoconference systems (Adobe Connect, BigBlueButton, Cisco Webex, GoToMeeting, OnSync, etc...), CMS websites (Joomla, Wordpress and Drupal), Salesforce, Google Analytics and Google Apps.

#### Course Marketplace



Docebo has a third party Course Marketplace - an ever-growing library of online courses from the best international content providers - with more than 400 courses available in different languages accessible with a single click. Topics covered: Compliance, Health and Safety, Language, Soft Skills, Technology.

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**Quality Assurance Guidelines for Open  
Educational Resources:  
TIPS Framework Version 1.0  
A Report by Commonwealth  
Educational Media Centre for Asia**



Quality Assurance Guidelines for

# Open Educational Resources:

*TIPS Framework*

**Quality Assurance Guidelines for Open  
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TIPS Framework Version 1.0  
A Report by Commonwealth  
Educational Media Centre for Asia**





Quality Assurance Guidelines for

# **Open Educational Resources:** *TIPS Framework*

Version 1.0



Commonwealth Educational Media Centre for Asia  
New Delhi

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# Executive Summary

Open Educational Resources (OER) are currently seen as a viable way forward for achieving education for all. In particular developing countries can benefit through OER from developed regions. Indeed OER are now popular in Western countries and are being pro-actively created by specialist educators and institutions. These mostly involve tertiary formal education almost to the exclusion of pre-tertiary (particularly out-of-school), non-formal, vocational, and lifelong learning. Accordingly these guidelines set out to increase the author-base by offering ideas to teachers in primary and secondary schools - so that when they look at creating their own OER they have recourse to these guidelines to help them. Not all the criteria listed here are relevant to each OER or to each author, and no prescriptive purpose is intended.

The aim is to offer a starting point for building a culture of quality and professional reflection among teachers who are interested in creating their own OER. The intended audience includes also their students who may want to learn through creating OER. It is hoped that through these guidelines that teachers in developing regions produce their own OER and contribute to this movement for the benefit of themselves and others who reuse their work. Accordingly we define OER here as being digital educational resources with an attached open licence allowing others to reuse, adapt and share their work. This report explores the original definition of OER and subsequent versions, and puts forward a current definition drawing from received feedback, research and practice. The report here including the framework of criteria is offered as a work-in-progress, and hopes to stimulate feedback from users of the guidelines so as to improve them.

More than thirty frameworks giving criteria for quality assurance in related fields such as e-learning or educational innovations have been reviewed. Criteria have been harvested from these frameworks, from the research literature, from workshops of OER experts and from individual OER experts around the world. The result has been a short-form T.I.P.S. framework where the TIPS acronym stands for the Teaching and learning process, the Information and material content, the Presentation, product and format, and System, technical and technology. It has been stressed that these guidelines should be user-friendly in an accessible manner so that readers can easily grasp the intended meaning and purpose. More than two-hundred criteria in a somewhat technical language have been collated for those who would like a more exhaustive coverage. However the present report is offered as a simplified tool that teachers around the world can read and find useful. Institutions using OER and creating OER can also adopt these guidelines for their internal quality assurance purposes.



# 1 INTRODUCTION

## 1.1 Background about OER

There is a current global movement towards open digital reusable educational resources. Most reports on open educational resources (OER) and open educational practice (OEP) start by clarifying their understanding and definition of the terminology. In particular they offer their interpretation of the meaning of ‘open’ as used in the expression ‘open educational resource’ and in other expressions especially ‘open content’ and ‘open access’. Now ten years old, the historic definition of OER is essentially functional to allow legal safety to anyone reusing OER without paying royalties and without having to apply to the copyright owner for permission to reproduce the resource. The historical *functional* definition of OER was given by UNESCO (2002, p.1) as “*technology-enabled, open provision of educational resources for consultation, use and adaptation by a community of users for non-commercial purposes ... typically made freely available over the Web or the Internet*”. In simple words, the term *open educational resource* (OER) is used here to mean a small self-contained unit of self-assessable teaching with a measurable learning objective, often in digital electronic format and generally free to use.

The history of open educational resources has some similarities to the earlier Reusable Learning Objects (RLOs). The earlier RLO movement had trouble with costs and sustainability, and attaching an open licence to OER is proving to be an efficient way to avoid the problems encountered by RLO. RLOs are small context-free chunks of teaching. The term ‘learning object’ was first proposed by Wayne Hodgins in 1994 (Polsani, 2011). The metaphor as lego building bricks was suggested by Gibbons, Nelson & Richards (2000), and as Meccano by Gerard (1969) as “curriculum units can be made smaller and combined into a great variety of particular programs custom-made for each learner”.

The reusable learning object movement seems to have slowed down in large part due to its lego-block one-size-fits-all industrialist approach and also because it does not cater to the teachers’ and learners’ needs: no *Needs Analysis* has been done, and indeed with context-free highly reusable RLO where the end-users are unknown, it is difficult to see how a meaningful *Needs Analysis* could be done. Even if an initial survey is performed, valid and reliable *Needs Analysis* must be performed in the end-users local context, initially and continuously throughout the course (since the aim of education is to change their minds). The RLO economy faced the early challenge of content localisation involving retrieval, adapting and

re-purposing content. These RLO problems have largely been resolved for OER by open licensing such as the Creative Commons licences.

The initial challenge for RLO (and for the OpenCourseWare (OCW) and OER movements) was to hold a threshold number of units to make sharing an attractive proposal. The received benefit had to be large enough to stimulate participation. The OCW movement requested a member to put into the pool a minimum number of courses, and could then receive access to the hundreds there from other members. If teachers feel there is nothing worthwhile to be gained, then it is difficult to motivate them purely on philanthropic comfort.

Funding for higher education in developing countries pretty much dried up (by around 1990) when it became visible that only the rich students from elite ruling-class families availed themselves or were allowed access to the educational resources funded by international aid. Agencies then switched to funding primary education for all. Currently OER and Massive Open Online Courses (MOOCs) are funded by elite universities and the students engaging them are those already relatively well qualified. If OER are to fulfil a purpose to ensure education for all and education for the poor and underprivileged, then more OER should be designed for pre-tertiary education.

## **1.2 Rationale for these Guidelines**

The purpose of this report is to stimulate the imagination of teachers as prospective authors of OER to reflect on possible ways they might adopt to build quality into OER created by them. This report collates ideas on quality to support a culture of quality surrounding the designing, testing out and sharing of OER, in local communities of practice. Teachers and their students - as prospective authors - are encouraged to reflect on these Guidelines and choose those they deem relevant to their wants and needs to create resources that are easily stored, reused and shared amongst themselves and other teachers and students. These Guidelines are not intended to be prescriptive in any way. In any case the situatedness of learning depends greatly on the culture and context of the authors, and they are best positioned to decide on which ideas are worthwhile adopting.

It has been remarked more than several times that these Guidelines are not that specific to OER and could be applicable to any learning materials. These remarks are quite correct, and as learning materials, OER indeed share much with non-OER materials. However OER are distinct in that they are digital and have an open licence attached to allow reuse, adaptation and sharing. Some other distinct properties are concerned with the technical aspects of open accessibility, discoverability, and adaptability. However, it is nonetheless recognized that many of the quality dimensions presented in the Guidelines here are naturally applicable to other learning materials.



The “open education movement combines the established tradition of *sharing good ideas with fellow educators and the collaborative, interactive culture of the Internet*. It is built on the belief that everyone should have the freedom to use, customize, improve and redistribute educational resources without constraint ... First, we encourage *educators and learners to actively participate* in the emerging open education movement. Participating includes: *creating, using, adapting and improving open educational resources*; embracing educational practices built around collaboration, discovery and the creation of knowledge; and inviting peers and colleagues to get involved.” (p1) The Cape Town Open Education Declaration, 2007, <http://www.capetowndeclaration.org>(emphasis added to underline the rationale and support the present Guidelines).

This report of suggested Guidelines focuses on offering ideas to teachers as creators of OER offering ways they could reflect upon in order to develop a culture of quality within their own respective local communities of practice. Teachers who embrace creating their own OER, potentially in collaboration with their own students, and sharing these OER, are likely to change fundamentally how people teach and learn. We also expect institutions supporting development and use of OER to adopt these Guidelines in their internal quality assurance practices.

### 1.3 Definitions of OER

9

The UNESCO (2002) original *functional* definition of OER was simply ‘free-of-cost’ to reuse. That definition uses ‘open’ as in ‘open courseware’ or ‘open content’, but does not include other aspects eg ‘open’ as in ‘open access’ or ‘open to places’. The definition of ‘open’ needs some more debate. Here the definition follows that suggested by Ross Paul (1993, p.116) simply to indicate that a particular educational system is more open than a previous alternative on any dimension. A definition by Perraton & Creed (1999, p.30) refers to ‘open’ learning as meaning education “in which constraints on study are minimised in terms of access, or time and place, pace, method of study, or any combination of these”. The definition of ‘open’ as in ‘open educational resource’ is given here as where constraints are minimised, compared with alternative practices, with respect to people, language, places, time, pace, methods of study, ideas, physical and/or online access, cost, flexibility, or any combination of these. The early definition of ‘open’ as free-of-cost needs widening for inclusivity eg to women, those with disabilities, minority languages etc beyond simply relating to money. Presenting criteria to evaluate the quality of e-learning, Ehlers (2012) adopts the meaning of ‘open’ as simply inclusiveness.

All of the above aspects relate to formal education. The definition could be widened to explicitly include non-formal education, thus open to society at large or open with respect to age could be added in the sense of OER being designed for lifelong learning.

Camilleri & Tannhäuser (2012, p.7) for the Open Educational Quality Initiative (OPAL, <http://www.oer-quality.org>) rewrite the UNESCO definition somewhat as “teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions”. The limited restrictions are summarised by Wiley (2009) in a 4R-framework of four rights, as follows:-

1. *Reuse : the right to reuse the content only in its unaltered form*
2. *Revise : the right to adapt, adjust, modify, or alter the content itself*
3. *Remix : the right to combine the original or revised content with other content to create something new*
4. *Redistribute : the right to make and share with others copies of the original content, your revisions, or your remixes*

In this 4R-framework, granting any one right makes the OER open, and granting all these four rights is at the most open. The copyright notices in order of openness, are shown in FIGURE 1 below according to Hodgkinson-Williams & Gray, 2008, with graphics drawn from <http://creativecommons.org/licenses>, based on the Creative Commons licences developed by Lessig (2001). The most open are those with no rights attached that are in the public domain such as many of those offered by ERIC <http://www.eric.ed.gov>. Camilleri & Tannhäuser (2012, p.16) confirm this as “what makes a learning resource ‘open’, is the licence it carries with it, i.e. that it carries a licence which at minimum allows reproduction and reuse of the resource”. This definition thus focused on cost and copyright. In clarification here Wiley & Green (2012, p.81) reiterated that these two aspects are actually only cost-related ; “In both cases, every person in the world enjoys free (no cost) access to the OER *and* free (no cost) permission to engage”. So the historical definition is free-of-cost, and purely *functional*.

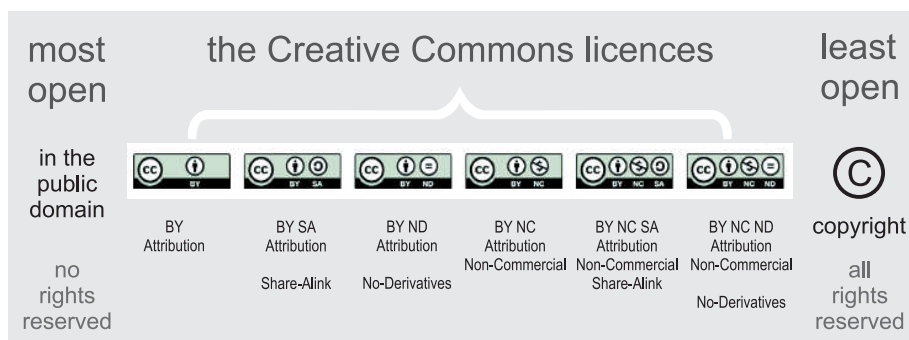


FIGURE 1: Openness and the Range of Creative Commons Licence Labels

The original definition of OER by UNESCO (2002, p.1) as technology-enabled and available over the web or Internet is made more open here to include materials, such as radio, television, audiovisual materials, and photographic or printed formats. It is also extended to include artifacts, lyrics, storytelling, speeches, drama, theatre and other performances that might be used for teaching (eg a 3D model of an atom, or a working model steam engine, where these are downloaded from a digital store and reconstructed as a physical object, similar to printing out online text for offline study). The issue here is whether OER applies only to the digital item or also to pre-digital state and to its re-constituted physical state.

While the OPAL definition by Camilleri & Tannhäuser (2012, p.7) refers to OER as being teaching, learning and research materials, the new definition here recognises that the teaching materials be designed for learning, and for no other purpose, and similarly that research materials too are for learning. Since the materials are for teaching oneself or others to learn, the definition employs the expression ‘self-assessable teaching’ where self-assessable covers the metacognitive awareness of the users and end-users to know what is being taught and learnt. The term ‘self-assessable’ here also means that assessment questions and answers are built into the OER, and where possible these questions should be open-response-type concept questions testing comprehension of ideas, rather than relying only on memory and recall as in some closed-response multiple-choice questions.

An early definition of OER by Weller (2009) was as a Big-OER or as a Little-OER, originally suggested by Michelle Hoyle concerned about OER production costs. The Big-OER were released by an institution after in-house QA and were generally expensive to produce, while Little-OER were small easily re-purposed context-free chunks similar to RLO.

*“Big OERs are institutionally generated ones that come through projects such as openlearn. Advantages = high reputation, good teaching quality, little reversioning required, easily located. Disadvantages = expensive, often not web native, reuse limited.”*

*“Little OERs are the individually produced, low cost resources that those of us who mess about with blogs like to produce. Advantages = cheap, web (2) native, easily remixed and reused. Disadvantages = lowish production quality, reputation can be more difficult to ascertain, more difficult to locate.” (p.2)*

Plotkin, (2010, p.1) defines OER as *“teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits sharing, accessing, repurposing – including for commercial purposes”*

The definition of ‘open educational resource’ (OER) is suggested in BOX 1 below. It was pointed out in the 2012 Seminar by OER-Asia that the UNESCO-2002 definition needs to be extended in coverage, eg. that OER be ‘relating to education - teaching and learning’ not simply free-of-cost to reuse. The present definition here incorporates the current views on how to define OER.

### **BOX 1 : Definition of ‘Open Educational Resource’**

An ‘open educational resource’ (OER) is defined as a technology-enabled self-contained unit of self-assessable teaching with an explicit measurable learning objective, being at some point in time in digital electronic format and generally free-of-cost to use. Accordingly it has an open licence attached. Additional attributes that are desirable but not essential include having vertical before-and-after links to other OER to form a suggested learning pathway, and embedded horizontal links within itself to other OER to offer added content to enrich the learning experience, and to offer alternative pathways. It should be designed to be easily adaptable by reusers, should be easy to download for use offline, is portable, and is transmissible across platforms. It should have metadata tags sufficient for discoverability, and has a built-in facility to include social tagging by end-users.

# 2

## METHODS

### 2.1 Defining Quality

Teachers in different contexts potentially hold various different perspectives on what constitutes quality in their own situation. Moreover some teachers may want a wider quantity of OER even at the cost of quality, and technically high-quality OER can sometimes lack essential utility - so that accessibility is reduced, particularly where high bandwidth is needed to download complex multimedia OER. While quality is very much in the eye of the beholder, we can conceive of three fields of quality. The first two - of quality as a product, and of quality as a process - are well known. As a product, an OER can be released with the logo or brand-name of an institution concerned with preserving and/or improving the reputation of the institution. Compliance to government regulations on accessibility for instance is legally binding on institutions. Many institutions have in place QA systems to assess OER quality before releasing the OER to the public. Beta-testing is also a way to determine product quality before public release. As a process, metadata tags can be completed by end-users of the OER to offer feedback and comments for future reusers. Provided such comments are moderated then they could be interpreted as defining quality in a continuous ongoing fashion, ie of quality as a process. We believe that the educational experience is much more than simply producing free online content (irrespective of it being high quality content). Accordingly the present Guidelines are more interested in nurturing the idea of quality as a culture.

Developing a culture of quality may be the best way forward rather than either advocating resources as quality products or simply promoting quality practices and quality processes. A few years ago, Andy Lane suggested that the OER benefits may come through teachers reviewing and improving their own educational practices (Hodgkinson-Williams, 2010, p.11) and it is this culture of professional reflection that we intend to stimulate with these Guidelines.

### 2.2 Review of Quality Frameworks

More than thirty frameworks of quality dimensions were discovered in the literature, and fifteen of these were of sufficient merit and relevance to be then explored in detail to extract dimensions and sub-dimensions of quality related to learning materials. These frameworks are those reported by Achieve (2011), Bakken &

Bridges (2011), Baya'a, Shehade & Baya'a (2009), Binns & Otto (2006), Camilleri & Tannhäuser (2012), CEMCA (2009), Ehlers (2012), Frydenberg (2002), Merisotis & Phipps (2000), Khan (2001), Khanna & Basak (2013), Kwak (2009), Latchem (2012), McGill (2012), Quality Matters Program (2011), and SREB - Southern Regional Education Board (2001) in alphabetical order. Some interesting observations were expressed in these reports on other frameworks, eg. Frydenberg (2002) reported that the e-learning field was finding it difficult to cope with student expectations - and this is true perhaps for OER. The SREB (2001) reported that design quality should move beyond delivery of content knowledge also to include, if possible, abstract thinking and critical reasoning to imbue the higher-order thinking skills - and this was for K6-12 students. This point remains a challenge for prospective authors of OER. The SREB also called (2001, item 1.8) for the e-learning course to provide the student with "access to resources that enrich the course content" which could be translated as horizontal links in OER to other materials.

Briefly the other frameworks are described next in alphabetical order of first author.

Achieve (2011) gives eight criteria areas in a framework called Achieve-OER-Evaluation to assess OER quality according to the USA common core state standards for curricula, as follows:- (i) Degree of Alignment to Standards, (ii) Quality of Explanation of the Subject Matter, (iii) Utility of Materials Designed to Support Teaching, (iv) Quality of Assessment, (v) Quality of Technological Interactivity, (vi) Quality of Instructional Tasks and Practice Exercises, (vii) Opportunities for Deeper Learning, and (viii) Assurance of Accessibility. The Achieve company is set up by the *Institute for the Study of Knowledge Management in Education* (ISKME) that is run by the repository *OER-Commons*. The technical language used is intractable and a barrier to adoption.

Bakken & Bridges (2011) give five criteria areas for online primary and secondary school courseware, as follows:- (i) Content, (ii) Instructional Design, (iii) Student Assessment, (iv) Technology, and (v) Course Evaluation and Support. These are international standards and could be useful for adopting in creating OER for school-level student end-users.

Baya'a, Shehade & Baya'a (2009) give four areas for evaluating web-based learning environments: (i) Usability (Purpose, Homepage, Navigation, Design, Enjoyment, Readability), (ii) Content (Authority, Accuracy, Relevance, Sufficiency, Appropriateness), (iii) Educational Value (Learning activities, Activity plan, Resources, Communication, Feedback, Rubric, Help tools), and (iv) Vividness (Links, Updating).

Binns & Otto (2003) give four criteria areas as the quality assurance framework for distance education, as follows:- *Products*, *Processes*, *Production* and delivery, and general *Philosophy* of the institution. These four areas were earlier suggested by

Norman (1984), and Robinson (1993) has reported these four used in Uganda together with the various components under each category (both cited in Binns & Otto, 2003, pp.36-38). The four-P framework may be relevant to developing regions where OER are used in face-to-face classrooms.

Camilleri & Tannhäuser (2012, drawn from pp.17-19) give eight dimensions as technical criteria and two as pedagogical criteria, as follows:- (i) Compatibility with a Standard, (ii) Flexibility and Expandability, (iii) Customization and Inclusiveness, (iv) Autonomy of the users during the interaction with the multimedia resources, (v) Comprehensibility of the graphic interface, (vi) Comprehensibility of learning contents, (vii) Motivation, engagement and attractiveness of the OER modules and/or learning resources, (viii) Availability of reporting tools (e-Portfolio), (ix) Cognitive: Interaction between the OER and Learner, and (x) Didactic: Instructional Design of the OER. The coverage by Camilleri & Tannhäuser (2012) is not comprehensive; eg there are twelve known educative interactions in the known literature, and Camilleri & Tannhäuser give only two:- the T-Ss and S-Ss interactions. Of the five domains of learning, Camilleri & Tannhäuser give only two: the cognitive, and metacognitive. Of the six cognitive processes, Camilleri & Tannhäuser give only two; reproductive (recall), and constructive (synthesis), and so on. Their model does offer however a framework on which to construct a full model of quality criteria.

CEMCA (2009) presents five criteria areas in an interesting Quality Assurance of Multimedia Learning Materials (QAMLM) framework based on the ADDIE model of instructional design. The ADDIE model is a process consisting of five stages:- Analysis, Design, Development, Implementation, and Evaluation. It can be used iteratively, and has some relevant shared fit with creating OER.

Ehlers (2012) gives seven criteria areas for quality assurance of e-learning courses as follows:- (i) Information about + organization of programme, (ii) Target Audience Orientation, (iii) Quality of Content, (iv) Programme Course Design, (v) Media Design, (vi) Technology, and (vii) Evaluation & Review. The second of these concerns *Needs Analysis* which may be problematic in OER, and also the last on evaluation can be difficult where students give anonymous feedback as social tags.

Frydenberg (2002) gives nine criteria areas as domains of e-learning quality, as follows:- (i) Institutional Commitment, (ii) Technology, (iii) Student Services, (iv) Instructional Design and Course Development, (v) Instruction and Instructors, (vi) Delivery, (vii) Finances, (viii) Regulatory and Legal Compliance, and (ix) Evaluation. These were labelled as Domains. There was no discussion beyond noting these nine were harvested from the literature.

Khanna & Basak (2013) give six criteria areas, as follows:-(i) Pedagogical, (ii) Technological, (iii) Managerial, (iv) Academic, (v) Financial, and (vi) Ethical. This set is interesting since they also give five levels of depth to these areas:- (1 - highest) IT infrastructure - services and networking, (2) Management support



systems, (3) Open content development and maintenance, (4) Open (online / public) teaching and learning, and (5) Learner assessment and evaluation. The six areas of Khanna & Basak (2013) are taken from Khan (2001, p.77) who gives eight, as follows:- (i) Institutional, (ii) Pedagogical, (iii) Technological, (iv) Interface Design, (v) Evaluation, (vi) Management, (vii) Resource Support, and (viii) Ethical.

Kwak (2009) gives twelve criteria areas in a framework that has ISO-9001 certification, as follows:- (i) Needs Analysis, (ii) Teaching Design, (iii) Learning Content, (iv) Teaching-Learning Strategy, (v) Interactivity, (vi) Support System, (vii) Evaluation, (viii) Feedback, (ix) Reusability, (x) Metadata, (xi) Ethics, and (xii) Copyright.

Latchem (2012, pp.81-86) gives four areas of criteria for quality assurance, as follows: (i) Immediate Outputs, (ii) Short-or-medium-term Outcomes, (iii) Long-term Impacts, and also (iv) Inputs.

McGill (2012) gives five criteria areas for determining the quality of OER, as follows:- (i) Accuracy, (ii) Reputation of Author / Institution, (iii) Standard of Technical Production, (iv) Accessibility, and (v) Fitness of Purpose. This framework is advocated by the institution-group HEA and JISC. They only lastly give consideration to the students and the OER being fit for use.

Merisotis & Phipps (2000) give seven criteria areas, as follows:- (i) Institutional Support, (ii) Course Development, (iii) Teaching/Learning, (iv) Course Structure, (v) Student Support, (vi) Faculty Support, and (vii) Evaluation and Assessment.

The Quality Matters Program (2011) gives eight criteria areas as a checklist for certifying the quality existing in online and blended courses, as follows:- (i) Course Overview and Introduction, (ii) Learning Objectives (Competencies), (iii) Assessment and Measurement, (iv) Instructional Materials, (v) Learner Interaction and Engagement, (vi) Course Technology, (vii) Learner Support, and (viii) Accessibility. The full QMP document is not open access.

The SREB - Southern Regional Education Board (2001) gives three criteria areas for K6-12 web-based courses, as follows:- (i) Curriculum, Instruction and Student Assessment, (ii) Management, and (iii) Evaluation of Delivered Courses. Of note they call for e-learning courses to impart the higher-order critical thinking skills to school children.

The above frameworks are inconsistent with each other in their top-level categories, and in their coverage. They have each been re-tabulated to explore better any similarities or crossover, and a review of them has been done and is available at <http://www.open-ed.net/oer-quality/others.pdf>. Findings show they could not be combined together, and rather served merely as *ad hoc* collections to be reviewed line by line. There thus became a need to find some framework that was comprehensive, with literature support, and which dealt with all the various aspects being used by other frameworks.



In order to collate the miscellaneous ideas of other frameworks and the ideas from the literature, and from online discussions with OER experts around the world, a five-dimension framework of the educational objectives was used as a scaffold. This scaffold is that which covers the educational objectives, and has the top-level dimensions of the *Cognitive Domain*, the *Affective Domain*, the *Metacognitive Domain*, the *Environment Domain*, and the *Management Domain*.

## 2.3 Conversations in the Cyberspace

About 60 experts were consulted through email to gather criteria for quality assurance of OER. Several experts raised the issue of sustainability and the costs involved to create good quality OER. However those concerns focused on quality as a product, whereas the present Guidelines set out to initiate and nurture a culture of quality among teachers as creators of their own OER, developing communities of practice locally that adopt aspects of quality that best suit their own situations. Therefore costs are not front-loaded or even noted, since the teachers discuss among themselves how best to make OER and share these with their colleagues. The only costs involved would be the opportunity costs (them not doing other activities which might bring in cash), their time and efforts. Given that the teachers will see that they can save time and effort in the foreseeable future through building OER, the sustainability and cash costs should be minimal. Discussion on the recovery of costs where they exist and discussion of sustainable business models for institutions to re-design and release OER are outside the scope of this report. More on this aspect is available in a COL publication by Butcher & Hoosen (2012).

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## 2.4 Initial Framework

At first a scaffold was drawn up onto which all the different ideas from the literature, from conversations, workshops and from other frameworks could be positioned.

When we adopt fitness-for-purpose as the overriding concern for defining the quality of an OER, then this suggests we focus on the learning achieved by the students who use the OER. There are five and only five *Domains of Learning*, focusing on achieved learning by students, and which cover all known educational objectives. Thus the *Domains of Learning* could be a good Framework as a basis, and onto which to position the various components concerning quality for OER.

According to some reports the quality of an OER should be determined by the subject content material (which is in the *Cognitive Domain of Learning*), while others have said the OER should be interesting and fun for the student (in the *Affective Domain*). Built-in self-assessment has also been advocated (in the *Metacognitive Domain*), accessibility and localisation (in the *Environment Domain*), and discoverability

as well (in the *Management Domain*) have been suggested. Briefly the five *Domains* and their respective coverage are summarised below. Together these constitute a full comprehensive model of learning, to serve as the basis of the Project-Framework here.

1. *Cognitive Domain* : the content knowledge, content skills, and reflective critical thinking skills to be learnt
2. *Affective Domain* : the motivations, attitude and decision to initiate performance, learner independence and autonomy
3. *Metacognitive Domain* : understanding how the task is performed, and the ability to self-monitor, evaluate and plan own future learning
4. *Environment Domain* : the localisation, artistic presentation, language, multimedia, interactivity, and embedded links to other content
5. *Management Domain* : discoverability, tagging, including for time management, transmissibility, business models

Some popular concerns are regarding accuracy and academic validity, which are in the *Cognitive Domain*. There is also awareness to initiate each of the various motivations to learn in the *Affective Domain* and how to help a student who develops a mood due to the content being overly difficult. The other three *Domains* are much less recognized, except for the *Management Domain* where a few aspects are now popularly mentioned such as searching skills, discoverability and coping with the massive amount of data available these days through the web.

Within each of the five *Domains*, categories as sub-dimensions were developed through a grounded theory approach. These are shown in TABLE 1 in the next page. The full Framework currently suggests more than 200 criteria to reflect upon, is available at <http://www.open-ed.net/oer-quality/criteria.pdf>.

## 2.5 Regional Consultation Workshop at Hyderabad

The collated list of criteria through online consultations and literature review were presented before group of experts in a workshop mode in the Regional Consultation Workshop on Developing Quality Guidelines for Open Educational Resources held at Maulana Azad National Urdu University, Hyderabad on 13-15 March 2013. Expert participants also presented their views about quality issues during this workshop. Three outputs in particular are worth noting from the workshop. One is the construction of guidelines on quality, for teachers and/or students as original authors or adapters of OER. Another is the suggestion on development of a training module (much like that used for online tutor training) for these authors and adapters, with built in examples, models, templates and so forth. The third is the concept of a new domain suffix as (dot).oer. While this third output initially related to discoverability concerns, what with the millions of

already existing OER many of doubtful quality and reusability, the domain.oer could serve as a white-list of good quality OER from now onwards. It could serve as a process gateway through which people prepare their OER conscientiously. So that rather than dumping out-of-date lectures, the authors prepare good quality OER.

During the workshop, the five-domain quality framework presented was discussed in groups, and a shorter framework entitled TIPS was created, where the acronym TIPS is used to provide the top-level categorisation of criteria under the headings; (T) Teaching and Learning, (I) Information and Content, (P) Presentation, and (S) System.

**TABLE 1:** *Categories within the Dimensions of the Five-Domains Framework*

1. Content - Cognitive Domain:	
	1.1 knowledge and skills content
	1.2 pedagogy
2. Student Motivation - Affective Domain:	
	2.1 extrinsic motivation
	2.2 intrinsic motivation
3. Student Autonomy - Metacognitive Domain:	
	3.1 self-awareness & self-assessment of learning
	3.2 external evidence
4. Access - Environment Domain:	
	4.1 financial cost
	4.2 technical accessibility
	4.3 cultural and contextual localisation
	4.4 presentation and multimedia
	4.5 community
5. Packaging - Management Domain:	
	5.1 tagging for discoverability
	5.2 utility
	5.3 external validity

# 3

## CONCLUSIONS

### 3.1 The TIPS Framework

The final Framework consists of four dimensions, involving 19 categories as sub-dimensions and overall 65 criteria. These are shown in TABLES 2a-d below. It should be emphasized that this Framework is put forward to stimulate feedback on its efficacy for authors, and the Framework is expected to be revised to take into account the feedback received from individual authors, future workshops and from OER experts around the world.

**TABLE 2a:** *The T.I.P.S. Framework: Teaching and Learning Processes*

1. Teaching and Learning Processes		
Pedagogy	1.1	Consider giving a study guide for how to use your OER, with an advance organiser, and navigational aids
	1.2	Use a learner-centred approach
	1.3	Use up-to-date appropriate and authentic pedagogy
	1.4	Use methods that involve transfer to external situations, model future applications by the student and encourage further innovation
	1.5	Include schema activation cues wherever possible, bringing in the culture of the student
Rationale	1.6	You should clearly state the reason and purpose of the OER, its relevance and importance
	1.7	It should be aligned to local wants and needs, and anticipate the current and future needs of the student
	1.8	Illustrate the intended benefits to the student and where possible relate these to employable skills. You could add comments from potential employers
	1.9	Clearly state the intended age and/or level of your intended student

Student	1.10	Bear in mind your aim to support learner autonomy, independence, learner resilience and self-reliance
	1.11	Aim to engender a sense of self-worth in the student
Language	1.12	You should adopt a gender-free and user-friendly conversational style in the active-voice
	1.13	Don't use difficult or complex language, and do check the readability to ensure it is appropriate to age/level
Interactivity	1.14	Include learning activities, which recycle new information and foster the skills of learning to learn
	1.15	Say why any task-work is needed, with real-world relevance to the student, keeping in mind the work needed to achieve the intended benefit
Motivational	1.16	Accurately express the study work-load
	1.17	Consider offering a badge to reward initial engagement, progression, and/or final completion.
	1.18	Stimulate the intrinsic motivation to learn, eg through arousing curiosity with surprising anecdotes
	1.19	Reveal the discipline through your own eyes, conveying a passion for the discipline
Assessing	1.20	Offer academic credit upon successful completion, and/or suggest examinations for credit
	1.21	Monitor the completion rate, student satisfaction and whether the student recommends your OER to others
	1.22	Try to positively influence the personality of the student.
	1.23	Include a variety of self-assessments such as multiple-choice, concept questions, and comprehension tests
	1.24	Provide a way for the student and other teachers to give you feedback and suggestions on how to improve
Support	1.25	Link formative self-assessment to help mechanisms
	1.26	Try to offer learning support
	1.27	Your OER should point users to community groups

**TABLE 2b:** *The T.I.P.S. Framework: Information and Material Content*

2. Information and Material Content		
Accuracy	2.1	Make sure that the knowledge and skills you want the student to learn are up-to-date, accurate and reliable. Consider asking a subject-matter expert for advice
	2.2	Your perspective should support equality and equity, promoting social harmony, and be socially inclusive, law abiding and non-discriminatory
Relevance	2.3	All your content should be relevant and appropriate to purpose. Avoid superfluous material and distractions
	2.4	Consider linking with external examinations and/or national curriculum standards
	2.5	Your content should be authentic, internally consistent and appropriately localised
	2.6	To induce learning, include anecdotal misunderstandings and their consequences
	2.7	Encourage student input to create localised content for situated learning : draw on the student's prior learning and experience, and the student's empirical and indigenous knowledge
Content Load	2.8	Try to keep your OER compact in size, while allowing it to stand-alone as a unit for studying by itself. Consider whether it is small enough to reuse in other disciplines
	2.9	Add links to other materials to enrich your content

**TABLE 2c:** *The T.I.P.S. Framework: Presentation, Product and Format*

3. Presentation, Product and Format		
Openness	3.1	Be sure the open licence is clearly visible
	3.2	Try to reuse other OER as components
	3.3	Try to indicate if your OER is closed in any way eg. if your OER is localized to a specific culture, or if content might be inappropriate for some unintended users
	3.4	Ensure your OER is easy to access and engage
	3.5	Clearly give the original author contact information

Multimedia	3.6	Multimedia should be limited to two or three types
	3.7	Try to serve a variety of learning styles - keeping in mind a student might have weak eyesight or hearing
	3.8	Present your material in a clear, concise, and coherent way, taking care with sound quality
	3.9	Avoid using a 'talking head' video of the lecturer
	3.10	If you use any theme music, try to make this appropriate to the local culture and context
Design	3.11	Put yourself in your student's position to design a pleasing attractive design, using white-space and colours effectively, to stimulate learning
	3.12	Have some space for adding moderated feedback later on from your students
Format	3.13	Consider whether your OER will be printed out, usable off-line, or is suitable for mobile use
	3.14	Consider alternate fonts and font-sizes suited to the student, for inclusion eg to serve old-aged students
	3.15	Use open formats for delivery of OER to enable maximum reuse and re-mix.
Pathways	3.16	Consider suggesting which OER could come before your OER, and which OER could come afterwards in a learning pathway
	3.17	Consider offering alternative OER to your presented OER to give choices in learning pathways

**TABLE 2d:** *The T.I.P.S. Framework: System, Technical and Technology*

4. System, Technical and Technology		
Discoverability	4.1	Consider adding metadata tags about the content to help you and others later on to find your OER
	4.2	Give metadata tags for expected study duration, for expected level of difficulty, format, and size
	4.3	Try to use only free sourceware/software, and this should be easily transmissible across platforms
	4.4	Try to ensure your OER is easily adaptable, eg. separate your computer code from your teaching content

Technology	4.5	If using any voice or music, try to keep this separate from the computer code to allow easier translation or re-localisation
	4.6	Your OER should be easily portable and transmissible, and you should be able to keep an off-line copy
	4.7	Your OER and the student's work should be easily transmitted to the student's own e-portfolio
Technical	4.8	Give alternate ALT text for each image
	4.9	Include a date of production, and date of next revision
	4.10	Point users to appropriate technical support groups
	4.11	Consider allowing social tags to allow any student or teacher to add a review
	4.12	Consider adding metadata tags to allow students to give feedback on the immediate output, short-term outcome, and long-term impact

## 3.2 Referrals & Validations

These Guidelines have been collated from online discussions with OER communities and referred to about 60 experts in the OER field around the world for feedback, comments and suggestions on how to improve them. Workshops have been held in India and in Britain, and feedback from participants has been digested and incorporated wherever practical. Further validations are on-going and are planned during the coming year(s). Readers and practitioners are urged to try out these Guidelines and to report back their own experiences.



# 4

## USING THE GUIDELINES

The TIPS Framework offers guidelines to prospective OER authors who are teachers or students. These persons either as individuals, in partnership with subject-matter-experts, or in teams of like-minded authors are invited to read through these criteria given here as ideas for improving the quality of the authored OER. There are several reasons for trying to improve the quality of any OER -- one is to develop professional reflection-in-action and so improve individual practice, another is to improve our own teaching efficiency by recording and storing content for reuse later on, and thereby save on own future time, effort and costs, and one other reason is to share ones work with others either locally or around the world so as to promote education for all.

Prospective authors are encouraged to look at their own teaching materials - such as syllabus, lesson plans, detailed notes and content materials. After this they can read through these Guidelines and see ways in which they might choose to adapt or re-write their materials so as to make storing and retrieval easier. After re-writing, they can share with a colleague and perhaps after testing out the OER, the two of them can talk about further ways to improve the quality when these Guidelines are also expected to be of some use.

Of secondary purpose, teachers or students after reading through these Guidelines might feel better able to judge the quality of OER they retrieve from the Internet. In both cases of authoring and of re-using OER, these Guidelines aim to stimulate the gradual development of a culture of quality surrounding the use, reuse and sharing of OER to generally improve teaching and learning.

# 5

## FUTURE

We visualize the presented set of 65 criteria as version 1 of the TIPS framework. Over the next years, we expect that teachers in educational institutions will adopt these criteria relevant to their context and provide us feedback to further polish and refine the language as well as usability of the document. We will also undertake analysis of the content validity of the criteria and explore the feasibility to develop a rating scale around a specific set of criteria to help development of an online application/system to allow users' rating of OER based on criteria chosen by them. Thus, CEMCA will continue to create awareness about the quality assurance of OER and further improve the quality of the TIPS framework. Your comments and suggestions in the process are highly welcome.

# 6

## REFERENCES

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