E-LEARNING FACILITIES AND IMPLEMENTATION OF EDUCATIONAL TECHNOLOGY CURRICULUM IN COLLAGES OF EDUCATION IN CROSS RIVER STATE, NIGERIA

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Abstract
This study investigated the influence of e-learning facilities on educational technology curriculum implementation in Colleges of education in Cross River State, Nigeria. To achieve the purpose of the study, a research questions were posed and a null hypotheses formulated and tested at 0.05 level of significance. Review of literature was carried out according to the variables of the study. The study adopted the ex-post facto research design. The sample of the study compromise one hundred and eighty-one students (181) from year two in College of Education Akamkpa and College of Education Obudu, all in Cross River State. The instrument for data collection was a 15 item structured questionnaire developed by the researcher. The instrument was titled "E-learning facilities and educational technology Curriculum Implementation in Tertiary Institutions Questionnaire (EFEDTCITIQ)". Simple linear regression analysis was used to analyze the hypothesis. The findings of the study revealed that there is a significantly influence of e-learning facilities on educational technology curriculum implementation in colleges of education in Cross River State Nigeria. It was recommended that the government and school administrators should provide computers and other ICT facilities in the schools to aid students in learning and research. There is equally the need for modern

technology in learning such as the use of interactive board in different faculties in the institutions to aid learning processes. Also the government and school administrators should make sure there is constant power supply (electricity) in the institution to power the e-learning facilities such as computers and its accessories.

Keywords: E-learning, facilities, curriculum implementation, educational technology, Colleges of education, Cross River State.

Introduction

In the contemporary era the role of technology has been a powerful instrument in the advancement of industrialization as well as enhancement of efficiency. The vast opportunities created by technological revolution plays a fundamental role in improving the quality of working facilities, providing efficient humanitarian support and assisting the education sector in the protection of educational core values and standard (Ivowi, 2004).

With reference to curriculum implementation which is all about putting into practice (implementation) all the learning experience prescribed by the institution, E-learning facilities could play a crucial role in actualizing this objective. Electronic learning (e-learning) may involve the use of mobile technologies such as, personal digital assistance (phone or handled personal computers), MP3/MP4 players and also include the use of web-based teaching materials such as rooms or website discussion, collaborative software, blogs, wikis, text-chart computer aid assistant, educational animation, simulation, games, learning management software, and so opn (Ogunsola, 2005). An E-learning facility has become increasingly popular learning approach in higher educational institutions due to vast growth of internet technology. It directly improves student's performance in general Rodgers (2008).

E-learning is the act of taking a coupe online using a modem, wireless, or cable connection to access academic course materials from a computer, phone or other devices. Bermejo, (2005), E-learning centers on the intersection of education, teaching, and learning with ICT. Okoro, (2000) defined E-learning as education that uses computerized communication systems as an environment for communication, the exchange of information and interaction between student and instructors.

Computer-Assisted Learning (CAL) is presently an important element in the process of teaching and learning in our tertiary institutions (Ogunsola, 2005). Computer usage allows more flexible (asynchronous) and more personalized learning. It **offers new** methods of delivering subject at all education level. Examples of these computers include broad band services, interactive boards and so on. Notwithstanding the availability of these new e-learning technologies in most of our tertiary institutions, without the availability of

electricity these facilities cannot be used even when available.

The application of interactive whiteboard is one example **of** technology use in the classroom because of its ability to **improve** the teaching-learning experience by providing useful means to interact with the electronic content and learning context (Campbell, 2010). An interactive whiteboard allows information exchange between the computer, on one hand and the teacher and his students, on the **other** hand through screen touch. An interactive whiteboard offers both teacher and student a wide range of multimedia that enable them to activate the written text, still images and authentic materials on the Internet by using PowerPoint presentations, audio and video in an exciting way in the classroom, (Silva & Cruz, 2008). An interactive whiteboard is used in the classroom because of its ability to use attractive presentation, colors in the display monitor, and impressive signs on students' responses. It also makes a balance between the different learning styles, whether audio, visual, or motor by choosing certain tools to promote each other on the screen.

Electricity is a form of energy usually carried by wires or supplied by batteries used to power machines and computing, communications, lighting, and heating device (Wikipedia). E-learning facilities are and can be accessed but cannot be used without the availability of Electricity. The lack of electricity at schools is unfortunate, because of the multiple services it can provide in the classroom. Lighting can enable classes to be taught early in the **morning** or late at night. Electricity access facilitates the introduction of ICTs into the classroom such as computers and televisions. Electrified schools can enable principals to recruit and retain better qualified teachers, and have been correlated with improvements on both test scores and graduation rates. As one study states, electricity ''allows the access of lower-income people to lighting, communication, as well as a variety of educational delivery opportunities A major impact of electrification has been reducing illiteracy and improving the quality of education, Isangideghi (2003). The IT Network is a background of the modem learning environment and when power is interrupted, nobody earns a passing grade Mitch, (2019). The power crisis imparts both teachers and students, limiting their ability to fully engage in the digitally enabled educational environment, leaving in many cases, the educational process to rely on archaic **method or** system Rankin (2019).

Today, technology is a tool used to remove geographical barriers and facilities everybody uses to learn anytime and anyway without the presence of the lecturer Dorcas (2003). The main purpose of e-learning facilities is to increase accessibly of education and reducing cost time as well as improving student's performance. Therefore, the survival of environmental education student in the 21st century will increasingly rely on various forms of electronic facilities that are in available in market as requirement for **educational** flexibility It is on this

basis, this study seek to investigate the influence of E-learning facilities and academic performance of environmental education students.

Successful curriculum implementation need the knowledge of the correlation, responsibilities of stakeholder within the institutions. This concept of implementation has to do with operationalization of a good ideas and theories in educational development. That is to say that to implement involve putting into action ideas or theories. Mezieobi (2003), sees implementation to be ways of transforming agreed educational plans proposal, idea decisions and policies into actualization. According to Mezieobi (2003), success or failure could be the end product of any conceived plan. Implementation when not obtainable, a plan will only remain a wish or rather intention. On one hand, curriculum within a school system is viewed as planned learning experiences given to students in school. Enukoha, Umoren and Esu (2004), sees curriculum to be the whole learning experience a student is given been guided by a teacher. Offorma (2005), opined that curriculum has three basic parts: "programme of studies, programme of guidance and programme of activities". Curriculum is hence the guide or instrument the schools employs in translating, hope as well as societal values to desired reality or outcome.

Garba (2004) sees implementation of curriculum as transmitting curriculum from paper to field towards achieving of the desired goal of designed curriculum. Okebukola (2004) stated that curriculum implementation has to do with translation of aims of the curriculum from paper to practice. It has to do with the level of curriculum process when within of learning processes, tutors and students been involved are at work geared towards enhancing learning. It involves the interactive phase of curriculum process that occurs within classroom in agreement with the teachers, students, school administrators as well as parents. It involved the use of physical equipment's in addition to the good teaching techniques. The curriculum implementation is bedrock of its scientific, economic, political as well as technological wellbeing of societies. And of cause, it is often said that societies don't rise above the system educational standard.

However, the main challenge of Nigerian educational system is how to put into practice the well-intended as well as articulated curriculum through feasibility as well as full-scale commitment in implementation. In agreement with the above statement, Mezieobi (1993) stated that within Nigeria, many curriculum proposals have remained virtually inert and never put into use. That is to say that, any curriculum could be well articulatd but remain useless if implementation is not well effected. "No matter how well formulated a curriculum may be, its effective implementation is a sine qua non toward achieving the desired goals of education, this is because the problem of most programmes arises at the implementation level, acknowledging this, Mkpa

(2005) stated that in Nigeria, it is at the implementation stage that many excellent curriculum plans and other educational policies are marred, giving reasons for the failure of curriculum in Nigeria, Mezieobi (1993) stressed that curriculum with all its well-conceived goals is failing, largely as a result of implementation dormancy or fault" (P;99). This challenges is volatile, taking up a level of national as well as institutional practices within Nigerian system of education. More so, Izuagba and Atuobi (2009), opined that the more complex of the Nigerian society is now resulted from social as well as cultural changes an equally has different effect on implementation of curriculum especially at the tertiary level. That is to say that, Nigeria tertiary educational institution had is grossly unable to satisfied the man power require for societal development and growth. Consequently, Izuagba and Atuobi (2009) stated that within last twenty years, graduate of Nigeria tertiary institutions are so highly deficient in practical as well as professional skills by employers of labour within public and private own industries.

Educational technology is a programme of study in our tertiary institutions. The term educational technology has to do with technology in education. It is the type of education that concerns itself with the use technology as a tool to enhance effective teaching and learning process across all subject areas. Richey (2008) posited that educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources and aids to improve the progress of human learning. Faizi, Shakil, and Sidra-tul-Muntaha (2013) view educational technology as a system in education in which machines; materials, media, men and methods are inter-related and work together for the fulfillment of specific educational objective.

There are different types of e-learning facilities used in our educational technology department that enhances learning processes, these includes; PowerPoint presentations, calculators, interactive board, computer, TV and internet and so on. Through educational technology students develop a wider range of knowledge and understanding of concepts for higher productivity through improved learning processes.

Educational Technology in our institutions is therefore concerned with designing the system as a whole, identifying aims and objectives, planning the learning environment, exploring and structuring the subject matter, selecting appropriate teaching strategies and learning media, evaluating the effectiveness of the learning system and using the insights gained from evaluation to improve that effectiveness for the future (Ololube, 2006)

Theoretical framework
This study is anchored of the following theories:
1. Lave and Wenger Situated learning theory (1991)
2. Jerome Bruner's constructivist theory of learning (1966)

1. Lave and Wenger Situated learning theory (1991)
Situated learning theory was postulated by Lave and Wenger (1991). They theorized that learning as it normally occurs is a function of the activity, context and culture in which it occurs (it is situated). This contrasts with most classroom learning activities which involve knowledge which is abstract and out of context. Social interaction is a critical component of situated learning as learners become involved in a community of practice which embodies certain beliefs and behaviors to be acquired. As the beginner or newcomer moves from the periphery of this community to its center, they become more active and engaged within the culture and hence assume the role of expert or old-timer. Furthermore, situated learning is usually unintentional rather than deliberate.

Other scholar has developed this theory of situated learning. Researchers like Brown, Collins and Duguiid (1989) stated that the concept as cognitive apprenticeship: Cognitive apprenticeship supports learning in a domain by enabling students to acquire, develop and use cognitive tools in authentic domain activity. Learning, both outside and inside school, advances through collaborative social interaction and the social construction of knowledge, Brown et al (1989) equally acknowledged the need for a new epistemology for learning - one that emphasizes active perception over concepts and representation.

The implication of this theory to this present study, is that it clearly explained that for there to be effective implementation of curriculum in the higher institutions and indeed by extension the general public, the environment and indeed culture has a role to play in influencing the students to imbibe the culture of sustainability that is in practice or otherwise may be misled making the aim of the programme ineffective. Therefore "Social interaction is a critical component of situated learning whereby learners become involved in a *community of practice* which embodies certain beliefs and behaviors to be acquired". The theory is effective in understanding and explaining some variables under study which is e-learning which enhances students' academic performannce. This is so because the practices of a place has a way of shaping the attitude and behavior of a new comer toward adopting a concept.

2. Jerome Bruner's constructivist theory **of** learning **(1966)**
The theory proposed by Jerome Bruner (1997).; Bruner introduced the concept of learning by discovery. Bruner is of the view that learning is effectively engaged in, if the learner is given the opportunity to discover facts by

him/herself. Bruner argues that mere presentation of information will not enhance effective solution of a problem. The theory stresses cognitive effectiveness. Because of this, some referred to Bruner's theory of learning as Bruner's theory of cognitive development.

According to Bruner such inconsistencies lead to intellectual discomfort that will stimulate (i.e. motivate) the students to initiate individual discoveries through cognitive restructuring (i.e. internal reorganization). The intellectual discomfort created by the inconsistencies makes the learner to attempt to bring order out of this confusion by engaging in mental processes i.e. discovery activities which involve observation, hypothesizing, measuring, stating problem, data collection, classifying, inferring, and so on. Through mental processes, the student can generate facts from his/her desperate experiences. Experiences gained during the mental processes enable the students to sense the disparity.

According to Bruner there are two forms of discovery processes which are- Assimilation and Accommodation. Assimilation occurs when a student recognizes a new situation that is familiar to one of the elements in the existing structure of knowledge (i.e. cognitive structure) and he/she easily assimilates it. Accommodation is when a new situation (i.e. a new knowledge) is incompatible to the existing structure of knowledge (i.e. cognitive structure) the learner first restructures (i.e. reorganizes) his/her cognitive framework (i.e. cognitive structure) in order to be able to accommodate the new knowledge. According to Bruner (1966), students should find out information on their own using mental processes. The theory places great emphasis on the three types of human activity for learning i.e. the three information processing systems which are: Physical activity (motor activities) called Enactive representation, Imagery called Ionic representation and Symbolic activities.

The three activities coexist with each other and for this reason; the attainment of one does not mean the total abandonment of the others. At enactive stage, the child manipulates the learning materials directly by neuro muscular activities. At ionic stage, the child deals with mental images of objects, but does not manipulate them directly. At symbolic stage the child uses language. The interpretation of the above is that when a child, at secondary school level shows deficiencies in his/her learning capacity especially in symbolic representation, it could be that he/she was deficient in early stages (i.e. enactive and ionic stages) which he/she skipped. It is therefore necessary to fill in the missing gap by providing concrete support that will make up for the deficiency. Discovery learning, when encouraged in science instruction also aids problem solving because learning by discovery stalls with problem solving (Aknmoyewa, 1992). Discovery learning also stimulates creativity in the student, which is one of the major objectives of science teaching/learning.

The theory is related to this study because it helps the learners in interpreting information in a simple and language they understand to peers for readily assimilation and make them better participant of the course. It also highlights the facts that the knowledge of e-learning facilities is exponential and can be acquired through past knowledge. It emphasis is on the active involvement of student in constructing knowledge for themselves and building new knowledge and past experiences.

E-learning and curriculum implementation
The major objective of education is growth of skill and knowledge for students. Therefore education is all about learning as well as knowing, that is never gotten only in institution of learning and or books. Education so useful in the life of people.   Modern society can only be enhanced through education. The usefulness of education is witnessed in the whole level of education both at primary, secondary, high secondary as well as in tertiary institutions which universities happen to be the main institutions which provide higher education.

Today, technology is a tool used to remove geographical barriers and facilities everybody uses to learn anytime and anyway without the presence of the lecturer (Dorcas, 2003). The main purpose of e-learning facilities is to increase accessibly of education and reducing cost time as well as improving student's performance. Therefore, the survival of student in the 21st century will increasingly rely on various forms of electronic facilities that are in available in market as requirement for **educational** flexibility It is on this basis, this study seek to investigate the influence of E-learning facilities and academic performance of environmental education students.

Access to computers in schools may improve student outcomes in several ways. Computer software has the potential to provide self-paced instruction that is typically difficult to achieve in group instruction (Koedinger *et al* 2000). Likewise, the content of instruction may be individualized to the strengths and weaknesses of the student. Because students can use instructional programs without the direct supervision of a teacher, ICTs and computer aided instruction hold the promise of increasing the overall amount of instruction that students receive (Cuban 1993 and Barrow, Markman, and Rouse 2009), while still allowing parents and teachers to monitor student progress. Computers, the Internet, software and other technologies, because of their interactive nature, may engage school children in ways that traditional methods cannot (Cuban 2003)

Bajoolvand, *et al.* (2014) identified the impact of interactive whiteboard use on reading comprehension of (14-15) year-old students who were learning English as a foreign language. Results showed a significant difference between the performance of the experimental group students in reading comprehension and

the performance of their peers in the control group in favour of the experimental group that was taught via the use of interactive whiteboard. Besides, there was an impact of the interactive whiteboard that encouraged students to be fully engaged in the lesson and raised their enthusiasm and motivation.

Moronfola (2004) carried out a research in Ilorin Local Government Area of Kwara State. The researcher used questionnaires to collect data on the availability of electricity, related these to students' achievements in each of the selected subjects and to the amount of resources available for the teaching of the subjects. Finding showed a significant effect of electricity availability on the student's academic performance. Electricity allows for them to read in the night than the use of rechargeable lamps which also depends on energy to get functioning.

Adeyemi (2000) studied the effect of utilization of instructional materials in teaching literary classes in Kwara State and found out that such materials as projecting material, radio and television contributed to real understanding. The unfortunate thing is that they are not readily used by the teachers and also lecturers due to the unavailability of light and this tends to affects the academic performances of the students. The results obtained from the study shows that lectures carried out using learning facilities such as Interactive board and computers helps in the development of manipulative skills which in turn increases the performance of the students.

E-learning have been an indispensable tool in global educational system which has plunged many educationist, academia's, collegiate and college of allied educators into various researches on the effect of these facilities and the academic performance of students. Imperatively from the literature reviewed, the researcher centres on the positive influence of the utilization of e- learning facilities on students and their academic performances. That the students have laudable access to many research materials and tutorials at ease that improve and enhances their profoundness of their academic knowledge as well as their information retrieval.

RESEARCH METHODOLOGY

Population of the study
The study population is made up the whole students of curriculum and teaching/educational technology in the colleges of education in Cross River State 2018/2019 academic year. These include, College of Education Akamkpa and College of Education Obudu. The selected departments have a total population of five hundred and seventy (570) students.

Sample

The sample compromises of one hundred and eighty year one students of curriculum and teaching/educational technology department across, College of Education Akamkpa and College of Education Obudu.

Research questions

A research questions wear raised to give direction to this study as follows:

1. How does E-learning facilities (in terms of computers, interactive board, and electricity) influences the educational technology curriculum implementation in colleges of education in Cross River State?

Research hypotheses

A research hypothesis was subsequently formulated to give answer to the research questions. It is stated as thus:

1   There is no significant influence of E-learning facilities (in terms of computers, interactive board, and electricity) on the educational technology curriculum implementation in colleges of education in Cross River State. .

Data analysis

In this section, each of the hypotheses of the study was re-stated, and the statistical analysis carried out to test it using simple regression analysis. It is presented and interpreted. Each of the hypotheses was tested at 0.05 level of significance.

Ho: 1 There is no significant influence of E-learning facilities (in terms of computers, interactive board, and electricity) on the educational technology curriculum implementation in colleges of education in Cross River State. Result of the analysis is presented in Table 1.

TABLE 1

Simple regression analysis of the influence of E-learning facilities (in terms of computers, interactive board, and electricity) on the educational technology curriculum implementation in colleges of education in Cross River State

Variable	R	R^2	Adj. R^2	Std. Error		
Computer application	.210[a]	.044	.043	4.13545		
Source of variation	SS		Df	MS	F	Sig.
Regression	537.960		1	37.960	31.456	.000[b]
Residual	11629.313		179	21.102		
Total	12167.273		180			

*significant at .05 level.

From table 2 above the analysis showed that the Adj R^2 is 0.043. This implies that 4.3% of the variance in the dependent variable (Educational

technology curriculum implimentation) could be accounted for by E-learning facilities (in terms of computers, interactive board, and electricity) in the colleges of education in Cross River State. However, though the percentage contribution is small, a cursory look at the table showed F=31.456 (at p<.05). Since p (.000) is less than p(.05), it implies that there is a significant influence of E-learning facilities (in terms of computers, interactive board, and electricity) on the educational technology curriculum implementation in colleges of education in Cross River State. Hence the null hypothesis is rejected.

Discussion of findings

E-learning facilities and implementation of Educational technology curriculum

The result of hypothesis five showed that there is a significant influence of E-learning facilities (in terms of computers, interactive board, and electricity) on the educational technology curriculum implementation in colleges of education in Cross River State

This above stated conclusion is in line with the work of Agil and Ahmad (2011), who stated that the computer is a system that allows for the storage of information in files or documents. It carries various information and services such as Electronic mails, online chat, file transfers, the interlinked web pages and other documents of the world wide web (WWW). Thus, the advent of computer has heralded the emergence of a new form of knowledge production distribution in the soft form. Most of the research on technology in schools indicates that computers have had little effect on teaching practices or classroom activities.

Dhindsa & Emran (2006) also compared between the university students' grades in the pre and post tests after the study of six lessons in chemistry using or not using the interactive whiteboard. Results revealed statistically significant differences between students' grades in both groups in favour of the group that was taught via the interactive whiteboard. Galtin (2007) investigated the results of interactive whiteboard use in teaching mathematics, English, and science to pupils in grades four, five, and six respectively. Results asserted the fact that the performance of students in the three experimental groups who were taught via interactive whiteboard was better than their peers' performance that were taught without using the interactive whiteboard.

In the same manner, Moronfola (2004) carried out a research in Ilorin Local Government Area of Kwara State. The researcher used questionnaires to collect data on the availability of electricity, related these to students' achievements in each of the selected subjects and to the amount of resources available for the teaching of the subjects. Finding showed a significant effect of electricity

availability on the student's academic performance. Electricity allows for them to read in the night than the use of rechargeable lamps which also depends on energy to get functioning.

Conclusion

With reference to the results of this research work result a conclusions were reached that that there is a significant influence of E-learning facilities (in terms of computers, interactive board, and electricity) on the educational technology curriculum implementation in colleges of education in Cross River State.

Recommendations

Based on the conclusion of the study, the following recommendations were made:

1. .The government and school administrators school provide computer and ICT facilities in the school to aid students in research
2. There is need for modern technology in learning such as the use of interactive board in different faculties in the university to aid learning processes
3. As a matter of urgency government and school administrators should make sure there is constant power (electricity) in the institution as its importance in immeasurable.

References

Brown, J.S., Collins, A. & Duguid, S. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 32-42

Esu, A. E. O., Enukoha, O. I. & Umoren, G. U. (2006). *Curriculum development in Nigeria for colleges and universities*. Calabar: Media Mark Associates.

Faizi, W., Shakil, A., & Sidra-tul-Muntaha (2013). The Effects of Using Educational Technology in Private Secondary Schools of Karachi, Pakistan. *International Journal of academic research in Business and Social Sciences*, 3(4), 163-171.

Garba, M. (2004). *The critical role of educational resources on curriculum* implementation. In Noah, A. O.K., Shonibare, D.O., Ojo, A.A. & Olujuwon, T. (eds). Curriculum implementation and professionalizing teaching in Nigeria. Lagos: Central Education Service.

Ivowi, U.M.O. (2004). Curriculum implementation: Implications for schools administration. In Noah,A.O.K, Shonibare, D.O., Ojo, A.A and Olujuwom (eds) *Curriculum implementation and professionalizing teaching in Nigeria.* Lagos: A-Trial Associates

Izuagba; A. C. & Atuobi, A. O. (2009). Quality education through innovation: examples of tertiary institution in Nigeria. *European journal of social sciences* 10 (4) 605-613.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge, UK: Cambridge University Press

Lesley, C. G. & Michael, A. G. (2005). Field trips and their effect on student achievement and attitudes. *Journal of college science teaching: Research & Teaching*, 3(1)

Mezieobi, D. I. (2003). Effect of instructional materials on the teaching Social Studies in secondary school in Edo State. *Unpublished M.Ed thesis.* Delta State University, Abraka.

Mezieobi, K. A. (1993). *Social Studies Curriculum.* Owerri Whyte and Whyte.

Mkpa, M. A. (2005) Challenges of implementing the School curriculum in Nigeria. *Journal of curriculum Studies*, 12(1), 9-17.

Myers, B. & Jones, L. (2015). Ef*fective use of field trips in educational programming: A Three Stage Approach*", Agricultural Education and CommunicationDepartment

Offorma, G.C. (2005). Curriculum issues, resource provision and use in the arts and language teaching. *Curriculum and media technology research*, 1 (1), 162 –178

Okebukola, P. (2006). The State of Nigerian University in Borishade, B and Okebukola, P (eds) *Repositioning Higher Education in Nigeria.* Ibadan: Heinemann Education Books.

Okebukola, P.A.O. (2004). *Curriculum implementation in Nigeria*: Strategies for the21st Century in Noah, A.O.K., Shonibare, D.O., Ojo, A.A. & Olujuwon, T. (eds). Curriculum implementation and professionalizing teaching in Nigeria. Lagos: A Publication of Central Education Service

Ololube, N. P. (2006). *Teachers' instructional material utilization competencies in secondary schools in Sub-Saharan Africa: Professional and non-professional teachers' perspective*. In Conference Proceedings of the 6th International Educational Technology Conference EMU, 19-21 April. North Cyprus.

Richey, R.C. (2008). Reflections on the 2008 AECT definitions of the field. *Tech Trends,* 52(1) 24-25.