academicJournals

Vol. 5(6), pp. 117 - 123, December, 2013
DOI: 10.5897/IJVTE2013.0138
©2013 Academic Journals
http://www.academicjournals.org/IJVTE

International Journal of Vocational and Technical Education

Full Length Research Paper

Information and communication technology: The pivot of teaching and learning of skills in electrical and electronics technology programme in Nigeria

Samson O. Chukwuedo* and Godwin O. Omofonmwan

Industrial Technical Education Unit, Department of Vocational and Technical Education, Faculty of Education, University of Benin, Benin City, Edo State, Nigeria.

Accepted 6 December, 2013

The polymorphous nature of teaching and learning has contributed to the quest for skills delivery and acquisition at any place and pace. Teaching and learning of skills in electrical and electronics programme cannot be restricted to the traditional classroom settings, but should adopt favourable and acceptable technological dynamism. The inadequacy in the supply of facilities and qualified manpower perhaps has contributed to the need for skills delivery and acquisition in electrical and electronics programme through other technological means. One of such means found achievable is information and communication technologies (ICTs). This paper therefore reviewed ICTs as the pivot of globalizing teaching and learning of skills in electrical and electronics technology programme. The paper identified some of the skills in this programme, and ICTs that can be used to teach and learn the skills, by both normal and impaired teachers and learners. The findings from the survey questioning revealed that learners unavoidably support their teaching-learning situation with ICTs. It was therefore concluded that ICTs are pivot of teaching and learning of electrical and electronic skills.

Key words: ICTs, teaching, learning, skill, electrical and electronic technology, TVET.

INTRODUCTION

Education is meant to inculcate the adequate skills, values and attitude to the learners to enable them function effectively in a dynamic society. In the educational institutions, the process of acquisition of these attributes is teaching and learning. Every educational institution obviously cannot impart skills to learners without teaching-learning process. This makes teaching and learning one of the most important aspect of the educational institutions, of which technical vocational education and training (TVET) is one of such institutions.

There are various programmes in TVET and one of them is technical, industrial, industrial arts, technology or industrial technical education. These are related and can be used interchangeably as the same field of study. Industrial technical education is made up of different areas of specialisation. In all of the areas of industrial technical education, emphasis is placed on skills acquisition. Electrical and electronics technology is one of its areas of specializations. This area of specialisation in TVET (electrical and electronics technology) is one of the skills oriented programmes that must be acquired through teaching and learning (Bassauldo and Toby, 2004).

Electrical and electronics programme in TVET covers some content areas in electrical technology and in electronics technology. Some of these contents include *circuit theory and analysis, electrical installation, electrical devices and machines, digital logic circuits, electronic communication, semiconductor devices and circuits,*

*Corresponding author. E-mail: dissaml@yahoo.com. Tel: +2348029026002\+2348163389989.

electrical and electronics drafting, integrated circuits, microprocessors, transistors, amplifiers and electronic instruments, just to mention a few. These content areas are made up of various tasks involving numerous skills which can be taught and learnt in the traditional classroom, laboratory/workshop or with the use of appropriate technologies.

Teaching should be understood as a polymorphous activity. Many think of it as an activity which ends up in the classroom (Offorma, 2002), but in the modern time and of its sincerity, teaching is beyond that. Therefore teaching involves the process of impartation of appropriate, functional and related skills to learners, in any form, place and/or time, to enable them function effectively towards meeting the demands of the dynamic society.

The central purpose of teaching is to effect desirable changes in the learner's behaviour, (Ogwo and Oranu, 2006). This desirable change is termed learning. According to Farrant in Aleburu and Olunsanya (2007) learning is a process by which we acquire and retain attitude, knowledge, understanding, skills and capabilities that cannot be attributed to inherent behavioural patterns of physical growth. Learning thus is the process of change in behaviour of an individual through the acquisition of appropriate and related functional skills to enable him or her function in and explore the society he or she lives. Skills learnt in electrical and electronics programme enable the learner to exhibit such related skills when the need arises for electrical and electronics tasks or challenges.

The teaching and learning of skills or contents in electrical and electronic technology programme of TVET cannot be achieved only through the traditional classroom setting. In Nigeria there are insufficient human and material resources to acquire desirable skills in electrical and electronic technology programme of TVET. For this reason, other means such as ICTs are very necessary because it helps learners irrespective of location and time. In addition, many electrical and electronics devices, tools, equipment and appliances are not produced in Nigeria, hence the need to support learners with ICTs without waiting until there is sufficient human and material resources to facilitate teaching of the programme.

Skills can be broadly seen as the ability to do something well. According to Osinem (2008) skill refers to expertness, practiced ability or proficiency displayed in the performance of a task. Those series of learned activities or acts requiring simultaneous or sequential coordinated pattern of mental or physical or both activities in relation to an object and other displayed information, usually involving both the preceptor and effector process in electrical and electronics can thus be referred to as skills in electrical and electronics programme. The cognitive (theoretical or abstract), affective (values) and psychomotor (practical) related skills can be taught through the internet, satellite, CD and DVD recorded videos.

The aforementioned technologies are termed information and communication technologies (ICTs). According to Wonacott (2001), the use of ICTs in distance education has resulted in a pedagogy, which is constructivist, collaborative and interactive, and that the increased use of ICTs in TVET has resulted in a major paradigm shift, from a total dependence in the objectivist paradigm to a growing adherence of the cognitivist and constructivist paradigm. ICTs therefore can serve as effective tools towards the enhancement of the quality and quantity of skills acquisition at any place and pace (Chinien, 2003).

Statement of the problem

Electrical and electronic technology in TVET programmes in Nigeria has suffered insufficient supply of and perhaps less competent human resources to impart the skills to the learners. The insufficient supply, non-functional and/or lack of material resources such as tools, equipment and workshop have also limited the extent of skill acquisition in electrical and electronic technology programme because the school system lays more emphasis on the traditional classroom setting. This study therefore critically x-rayed ICTs as the basic support for electrical and electronic students so far in skill acquisition.

Purpose of the study

The main objective of this paper was to critically review the ICTs that have influenced skills acquisition in TVET in general, and then imply them to skill acquisition in electrical and electronics technology. Secondly, this paper was meant to report the survey of the opinion of electrical and electronic TVET students in Nigeria on the valuable support of ICTs to their skill acquisition.

REVIEW OF LITERARTURE

Information and Communication Technologies (ICTs): An Overview

Networking of computers gave birth to information technology (IT), and UNESCO considered IT as scientific, technological and engineering disciplines and management techniques used in information handling and processing, their applications, computers and their

interaction with men and machines, and associated social, economic and cultural matters (Sansanwal, 2009). IT was only limited to the textual mode of transmission of information (Sansanwal, 2009), and it is usually done with ease and fast. As a fact, the need for other means of transmission of information was explored because the transmission of information is not limited to textual form but also in audio, video or any other media or a combination of two or more of these forms. Individually, there are technologies for transmitting different information, but a good combination can be used to transmit data in order to give them better meanings and clear pictures. This means that ICTs = IT + other media (Sansanwal, 2009).

ICTs have their application in different areas of life. Oladipupo and Ilaboye (2006) identified areas where ICTs are applicable in human endeavours, and such areas include business, science, research, engineering, office automation, accounting, medicine and education. In the field of education, ICTs have played significant roles in virtual libraries, teaching, learning and research. Ogunsola (2005) asserted that apart from acquisition and absorption of knowledge, ICT could offer developing countries unprecedented opportunities to change educational systems, improve policy formulation and execution, and widen the range of opportunities for business and for the poor.

The dramatic nature of application of ICTs in education has made teaching and learning accessible anywhere, any place and any time. These technologies have made teaching and learning very flexible, irrespective of the nature of the learners, regarding their cognitive and learning styles (Chinien, 2003). Imel (1998) identified four different applications of ICTs in adult education, and these are technology as curriculum, technology as delivery mechanism, technology as a complement to instruction and technology as instructional tool. These applications of ICTs in education indicate their abilities to be used for teaching and learning cognitive, affective and psychomotor skills.

There are varieties of technologies that can be used in TVET, especially in electrical and electronics technology, to impart skills to learners. Some of these tools as identified by Chinien (2003) include audio-cassette tapes, radio, videotapes, compact disc read-on-memory, CD-ROM and digital versatile disc, DVD, internet, audio-conferencing, audio-graphics, interactive television, videoconferencing, satellite, interactive white-board, closed circuit television (CCTV), telephones. Majority of these tools are computer or internet based, and can be enhanced with the aid of software to enable both the normal and disabled learners acquire skills.

Software is a set of related programmes, and with it we turn the computer the servant of man in almost every profession (Onibere, 2011). In use, software can be classified as system software and application software. In most cases, the application software cannot function without the system software.

Examples of software that can be used for teaching and learning of electrical and electronics skills are *voice recorder, speech recognition, Microsoft Word, CorelDRAW, Adobe Reader, facebook, e-mail, skype, starboard, caspoc* - for power electronics, *Bin Hex Dec Converter*- for converting binary to hexadecimals in digital electronic circuits, *proteus*, *circuit maker* or *electronic workbench*-for design of electronic circuits, and *auto-cards*-for electrical drafting.

Skills in electrical and electronics technology

The teaching-learning process classification of skills is usually based on cognitive, psychomotor and affective. Skills can however be classified as basic, cognitive, psychomotor or manipulative, technical, human, conceptual, marketable, adaptive, occupational, transferable and/or process.

Ogbuanya and Ohanu (2010) stated that when one possesses adequate skill in carrying out a task, he/she does the work accurately within the minimum possible time and the work will always attract the attention of people.

The acquisition of skills in electrical and electronic technology programme should be supported with sufficient ICTs in order to widen the skill-horizon of both teachers and students

Some of the skills required in electrical and electronics technology include ability to define basic concepts in electrical and electronics, apply appropriate formulae in electrical and electronic calculations, read and interpret electronic schematics and wiring, may be regarded as cognitive skills.

The skills that can be regarded as psychomotor skills include assembling, or installing electrical and electronic devices and systems, designing logic circuits, identifying appropriate tools, equipment and materials for a specific task, installing satellite dishes, using test instruments to read the numerical values of components, voltages, current and resistance, applying appropriate trouble shooting techniques, e.g. in televisions, connecting electric machines to power source, connect cells in series, parallel and series-parallel, disassembling electrical or electronic devices or systems, e.g. mobile phones. Skills such as ability to avoid horse play when working in the workshop, ability to avoid the use of unkempt hairs in the workshop and using the right workshop wears and goggles can be regarded as affective domain (Ogbuanya and Ohanu, 2010; Ogbuanya, 2009; Theraja and Sedha, 2009; Bassauldo and Toby, 2004).

Teaching and learning of skills in electrical and electronics technology

The teaching and learning of skills in electrical and electronics technology programme can be achieved in the formal, non-formal and informal settings, but these skills are commonly acquired through formal and non-formal education. ICTs can also serve as support in order to bridge the gaps that might have been created in the technical competency of both teachers and learners, irrespective of the type of education (formal or non-formal). It is equally taught and learnt by both normal and impaired students, even old and young. In the non-formal setting, these skills are acquired through apprenticeship programme, and thus require more psychomotor and affective skills but little or no emphasis is laid on cognitive skills.

According to the Federal Government of Nigeria (FGN, 2004), non-formal education is all the form of functional education given to youths and adults outside the formal school system such as functional literacy, remedial and vocational education. It is linked with community groups, training institutions and other organisations (Ogwo and Oranu, 2006). In this system, electrical and electronics skills are learnt under a short term, and it is specific. One of such bodies through which such skills can be acquired in Nigeria as non-formal is the National Directorate of Employment, NDE.

Electrical and electronic skills are equally taught and learned in the formal educational system. This is where emphasis is placed not only on cognitive skills but also on psychomotor and affective skills. Here the skills are learnt in long term, and it is specific. Anetoh in Ogwo and Oranu (2006) referred to formal Technical Vocation Education, TVE, as the systematic training and instruction especially of the young learners in schools and colleges. Though the demand for formal education system is high, the increasing failure of it in terms of practical skills in Nigeria has made members of the society to still rely on skills of the non-formal system in electrical and electronic devices maintenance and repairs. If formal education is highly supported with ICTs and other necessary variables, large number of Nigerians will rely and depend on its graduates for services.

It is important to note that be it formal or non-formal, the teaching and learning of psychomotor and affective skills involve stages or processes. These stages can be achieved with appropriate and related ICTs. For teaching and learning of psychomotor skills, Chinien (2003) identified five main categories of taxonomy or approaches to be adopted. These approaches in turn influence the choice of selecting the appropriate ICTs for teaching psychomotor skills. The approaches include;

1. Imitation: the learner goes through a period of trial and error to perform an act.
2. Manipulation: the learner continues to practice to attain some level of proficiency.
3. Precision: the learner continues to practice to attain the competency required.
4. Articulation: the learner attains higher level of competency to solve problems.
5. Naturalization: the learner reaches a stage where response is automatic.

The teaching and learning of affective skills, e.g. safety rules, also takes five approaches, which are democratic approach, indoctrination approach, group discussion, dramatic involvement and role modelling (Chinien, 2003). A better understanding of these approaches enhances appropriate choice of ICTs for the teaching and learning of skills in electrical and electronics, as a good selection of the ICT gadgets will help to effect teaching and learning notwithstanding the nature of the teacher and the learner, the location and the time.

METHODS

This paper reported the literature analysis of ICT for skill acquisition in TVET, with the researchers' contributions on their implication in electrical and electronic technology. A survey questioning was also employed in order to reconcile the opinion of the students with literature analysis. Five basic questions were used for the survey.

RESULTS AND DISCUSSION

ICTs for teaching and learning of skills in electrical and electronics technology

Many ICT tools exist for teaching and learning of skills, and these include audio-cassette tapes, radio, video, DVD, CD-ROM, internet and assistive technologies such as CCTV, optical character recognition (OCR), text enlarger software and voice recognition software, to mention a few of them. Some of the ICTs and their applications in the teaching and learning of these skills, with their implication in electrical and electronic technology, are as follows:

1. Audio-cassette tapes can be used extensively in teaching and learning of some kinds cognitive skills (Perraton et al., 2002). It can equally be applied in affective domain but its use in psychomotor skills has great restriction. Nunes and Gaible (2002) affirmed that it is difficult to present complex concepts using tapes. Recorded information in audio-cassette can be uploaded to the internet for accessibility. Skills in electrical and electronics, such as definition of concepts and stating safety rules, recorded in an audio-cassette and uploaded

to the internet can be accessed by any learner. The use of *voice recorder* software in the computer can serve similar purpose as audio-cassette tapes.

2. Video tapes and DVD are good ICT tools for teaching and learning. They can be applied in teaching and learning of skills (Hampton, 2002). Just like the audio-cassette, information recorded with video tapes and DVD can be accessed online, depending on the format in which the information is uploaded and/or the software needed to access the information, for instance the use of you-tube. Video-tapes and DVD can help to give detailed steps of performing a task since they have the capacity of storing relatively large amount of information. Skills such as definition of concepts, design of circuits, and workshop safety rules in electrical electronic technology programme can be taught and learnt through these tools, even when uploaded to the internet.

3. Radio is one of the oldest technologies used for distance education and it can be used to broadcast programmes. It can be used to create interactive mode (Oujo, in Chinien, 2003). Hence it can be used for teaching and learning cognitive skills and attitudinal issues. Radio programmes, live or recorded, can be uploaded to the internet and then listen to by the users by using the web address that will facilitate the accessibility, e.g.www.bbc.co.uk if one wants to listen to education programmes in the internet.

4. Interactive White Board is usually used along-side a computer system and a projector to teach in a classroom. The lesson can be recorded (textual and audio) and saved for future purposes. It can be used for effective teaching of cognitive skills. Recorded information from the interactive white board can be transformed into DVD or video or even uploaded to the internet. The software that facilitates this operation is the *starboard*. Information in electrical and electronic technology can be saved with the aid of interactive white board in order to revisit the information or uploaded to the internet.

5. Television is another old type of technology for teaching and learning. It can be used as interactive television where instruction occurs over broadcast television (Chinien, 2003). Television can be effective for teaching and learning cognitive, affective and psychomotor skills in electrical and electronic technology. Television programmes can equally be accessed through the internet using appropriate address, e.g. www.cnn.com. Gbadebo et al. (2011) found that the amount of time spent on viewing television influences students' academic performance.

6. Telephone is another ICT tool for teaching and learning. It is a good interactive medium for acquisition of cognitive skills. In recent time, Nigerian students use telephone to discuss both abstract and concrete concepts. Three or more students can engage in conference calls for teaching and learning of electrical and electronic skills to take place

7. Audio-conferencing is another technology that allows two-way, real-time communication between instructors and learners through audio (Steven, 2001). This medium can be used for teaching and learning cognitive and affective skills in electrical and electronic technology programme.

8. Audio-graphics is essentially audio conferencing accompanied by visual and graphical aids (Chinien, 2003). There is limitation of its application to teaching and learning psychomotor skills but it is applicable in teaching and learning of cognitive and affective skills. This tool can be used to show a designed circuit diagram e.g. logic circuits in electrical and electronic technology.

9. Video-conferencing allows for individuals in different locations to see and hear each other in real-time through its equipment (Steven, 2001). This tool in combination with other media can enhance acquisition of skills (Perraton et al., 2002). Attitudinal skills, cognitive skills and psychomotor skills in electrical and electronics technology can be acquired through video-conferencing.

10. Simulation is a computer based instruction. This may be used to demonstrate psychomotor and affective skills. Simulation lectures can be uploaded to the internet to enable leaners access it. It is a tool that can show detail step by step of performing practical tasks. Skills such as connection of electric machines to power source, assembling and disassembling of devices, and safety rules while working at the workshop can be taught and learnt through this means.

11. Assistive technologies are computer based software that enhance teaching and learning to disabled or impaired learners. They include braille systems, screen reader and voice synthesizers, OCR, CCTV, text enlargement software, voice recognition software, keyboard alternatives, mouse alternatives, on-screen keyboards and teletypewriter (Australian National Training Authority, ANTA, 2002).

12. Internet is a computer based technology which is apparently more versatile probably because it can be used to disseminate information or perform tasks of the other technologies. Onugha (2009) stated that the internet is a vast resource for learning, and it operates on the principle of World Wide Web (www). It can be accessed by users anywhere provided there is availability of server. Its importance is far reaching that every human endeavours tend to depend on it for information processing, transmission and reception. The internet incorporates so many of the software for teaching and learning of affective, cognitive and psychomotor skills in electrical and electronics technology.

Obviously, these technologies can be used to teach and acquire skills at anyplace and pace, especially in electrical and electronic technology programme. The review analysis shows that face to face interaction

Table 1. Percentage distribution of responses from survey questioning.

Survey questions	Collated responses	
	Yes; F (%)	No; F (%)
Do you rely only on classroom/laboratory for learning any skill in electrical and electronic technology? And What are the ICTs you employ for learning elect/elect skills?	17 (63.0)	10 (37.0)
Radio programmes	-	27 (100)
Television programmes	6 (22.2)	21 (77.8)
Satellite programmes	8 (29.6)	19 (70.4)
CD, DVD videos	5 (18.5)	22 (81.5)
Use of internet	23 (85.2)	4 (14.8)
Multimedia	21 (77.8)	6 (22.2)
Do you learn abstract concepts in electrical and electronic technology through ICTs? and	19 (70.4)	8 (29.6)
Which of the following do you prefer to learn practical skills in electrical and electronic technology?		
Classroom/workshop interaction with the teacher	16 (59.3)	11 (40.7)
The use textbooks	5 (18.5)	22 (81.5)
The use of ICTs	10 (37.0)	17 (63.0)
Combination of two or more	24 (88.9)	3 (11.1)
Do you consider learning workshop safety/other affective domain in electrical/electronic technology through ICTs necessary?	17 (63.0)	10 (37.0)

between the teacher and the student cannot be completely replaced by ICT alone, but a combination will produce a better result in terms of skill acquisition. It can therefore be derived that ICT is unavoidable pivot of teaching and learning of skills in electrical and electronic technology programme. Though limitations exist in their use and accessibility, their benefits in skills acquisition cannot be over-emphasized.

The analysis of the responses collated from the survey questioning

The data collated from the survey questioning were analysed with frequency (F) and simple percentage (%). The results are presented in Table 1.

The results of Table 1 show that 27 electrical and electronic learners of TVET programmes were surveyed, and the results show that the student make use of ICTs for learning skills in electrical and electronic technology programme, though face to face interaction with the teacher in the traditional classroom/workshop and the use of textbooks cannot be ruled out in learning such skills. The results show that a combination of ICTs and other means makes learning effective. This paper therefore reports that ICTs serve and will continue to serve as pivot of teaching and learning of skills in electrical and electronic programme.

CONCLUSION AND RECOMMENDATIONS

Skills in electrical and electronic technology programme of TVET are so vast that a traditional classroom or workshop cannot serve as the only means through which such skills should be taught and learnt. Learners (normal or impaired) in Nigeria are faced with the challenges of insufficient resources, hence the need to up-date their knowledge beyond what is learnt in the classroom or workshop.

This paper therefore concludes that in order to improve the skills, knowledge and attitude of teachers and

learners in electrical and electronic technology programme of TVET, ICTs are unavoidable tools. These technologies have proved to be the supportive device of learners irrespective of their classroom or workshop exposures in terms of skill acquisition in electrical and electronic technology. ICTs are therefore indispensable tools in education.

Based on the foregoing, the following recommendations are made;

1. The use of video should be encouraged in teaching and learning of any kind of skill since it is cheaper, made up of visual and audio and can be uploaded as you-tube,
2. Every academic staff in the tertiary institutions of learning should develop internet lectures so that students can access information through the institution's website or other means.

REFERENCES

Aleburu JO, Olusanya RN (2007). Use of ICT to Enhance Teaching and Learning of Technical and Vocational Trades In Primary Schools. Available at http://www.devilfinder.com

Australian National Training Authority (ANTA) (2002). Strategies 2000, Access and Equity in Online Learning. Report on Assistive Technologies for Online training Delivery. Available at http://aflr.flexiblelearning.net.au/pdf/product_dev_plan_guide_2002.pdf

Bassauldo EA, Toby TU (2004). Instructional Development and Methods in Trades and Industrial Education. New York: Health and Company Publishers.

Chinien CO (2003). Analysis Survey: The Use of ICTs in Technical and Vocational Education Training.UNESCO Institute for Information Technologies in Education. Available at http://www.devilfinder.com

Federal Government of Nigeria (FGN) (2004). National Policy on Education (4th ed). Lagos: NERDC Press.

Gbadebo CT, Babayeju AA, Obalowu MA (2011). Influence of Television on Academic Performance: A Case Study of Senior Secondary School Students in Kaduna State. J. Educa. Health Technol. Res. 1(1): 12-20.

Ogbuanya TC (2009). Energy and Technology of Home Appliances. Enugu: Cheston Ltd.

Ogbuanya TC, Ohanu IB (2010). Entry level Skills Required by Technical College Electrical Graduates in Electrical Installation Trade. Nigerian Vocational Association J. 15(1): 342-352.

Ogunsola LA (2005). Information and Communication Technologies and The Effect of Globalization: Twenty-first Century "Digital Slavery" for Developing Country- Myth or Reality? Electronic Journal of Academic and Special Librarianshi, 6(1-2). Available at http://www.devilfinder.com

Ogwo BA, Oranu RN (2006). Methodology in Formal and Non-formal Technical/vocational Education. Nsukka: University of Nigeria Press Ltd.

Oladipupo AO, Ilaboye, OJ (2006). Information and Processing System: Theory and Practices. Benin City: Mindex Press.

Onibere EA (2011). Software: The Changing Changer. Inaugural Lecture Series 119, October 20, University of Benin. Benin City: University of Benin Press.

Onugha IU (2009). Internet-aided literature review. In E. U. Anyakoha (Ed), Developing Research Skills: Concepts and Conceptual Framework (pp. 69-84). Nsukka: Great AP Express Publishers Ltd.

Osinem EC (2008). Managing Agricultural Education and Training: Resources, Principles & methods. Enugu: Belony International Publisher.

Sansanwal DN (2009). Use of ICT in Teaching - Learning & Evaluation. Available at http://www.devilfinder.com

Sharrifudin RS, Mislan N, Wong CK, Julia GCH (2011). Teaching Psychomotor Skills with E-sports Courseware. International Journal of e-Education, e-Business, e-Management and e-Learning, 1(4). Available at http://www.ijieeee.org/papers/048-Z0045.pdf

Steven D (2001). Distance Learning for Technical and Vocational Education in Sub-sahara Africa. Available at http://www.gtz.de/wbf/bibliothek/detail.asp?number=1431

Theraja BL, Sedha RS (2009). Principals of Electronic Devices and Circuits: Analog and Digital in S.I. units. Ram Nagar. New Delhi: S. Chand and Company Ltd.

Wonacott ME (2001). Keeping Vocational/career-technical Education Current Trends and Issues Alert. Available at http://ericacve.org/ocgensp?tbl&ID=145