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The role of internet in the professional development of agricultural educators: The case study of Kermanshah Province, Iran

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Internet is one of the most important innovations in the field of information and this has a significant impact on education. The use of technology is increasing rapidly. Today, in the scientific communities, a large number of individuals are interested in internet. This is expected for researchers to update their knowledge to provide information to the internet for its services to be used. The aim of this study is to explore the role of the internet in the professional development of farming educators. Sample surveys of agricultural education instructors and Kermanshah City (N=35) were formed due to the small size of the population. The return rate of questionnaires delivered to learners was 30 items (85%). Information collected through questionnaire was analyzed using SPSS tool. Results showed that most educators of the internet search for scholarly articles and also acquire new information to develop their professional interest. Low-cost of internet access is a major constraint to the use of this important tool. The need for easier access to the internet is necessary for educators.

Key words: Agricultural educator, internet, professional development.

INTRODUCTION

Undoubtedly, the main components of agricultural education systems are teachers. Therefore, improving the professional development of agricultural teachers through proper planning is essential. Agricultural educators, through training of skilled and professional people, are considered among the most influential factors of educational systems. Professional development is a continuous learning process for all levels of education in the learning community. It aims to help educators in achieving their goals towards a brighter perspective. Professional development ensures that educators of content, processes, knowledge, skills are qualified and prepared to teach learners to fulfill their high levels of skill standards (Wisconsin, 2003).

Nowadays, with the development of tools for comprehensive information particularly, information technology development, the use of technology in the professional development of teachers is important.

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Internet is a tool that has great potential to encourage and facilitate teaching and learning in agricultural sciences and can serve as a new way to facilitate the processing of information, encouraging learners to be responsible for their own learning and to help teachers understand as a facilitator in the learning process. Hence, the educational use of the internet in daily life is growing increasingly (Demirbilek, 2009).

Policymakers and experts believe that the use of information technology capabilities and talents can have a significant impact on educational processes and outcomes (Drent and Meelissen, 2008). Due to this problem over the past decades, educator shaves a lot of pressure to make use of the abilities and talents of information technology (Al-Ammari, 2004; Accascina and Victor, 2003). Although information technology tools such as computers and the internet are widely available, they are very limited in the process of teaching and learning (Holecombe, 2000; Shiroma, 2000; Shireesh, 2004). Research and empirical studies suggest that the combination of ICT in education has a tremendous impact as in any other field and is one of the most important strategies for improving the quality of education (Leng, 2008). A large part of researches examines the status of teachers and ICT with emphasis that technology is a tool that can help teachers embody best practices to create enriched and collaborative learning environments, meet a variety of learning style needs, support learning transfer, address high-level thinking, make education equitable, incorporate real world problems, authentic assessments and prepare students for the need of lifelong learning (Coutinho, 2007).

Underwood et al. (2006) believe that when the field is provided with effective investments in ICT, it impacts the educational standards in schools and likewise makes teachers more professional and committed to giving quality and quantity teaching. According to Mary (2004), the computer can also be useful for teachers and students. The results of this research indicated that teachers need to have more training in computer skills. More than half of teachers do not have access to any computer sites, even though they are more beneficial to them than the students.

Hyosung (2004) shows that the use of information technology by educators directly influences the usefulness of information technology and the individual factors. Teachers' attitude towards information technology was in significant relationship with the use of information technology. The feeling of easiness in the use of IT has meaningful relationship with a sense of usefulness and use of information technology. In addition, environmental conditions and computer skills in the use of information technology by teachers were effective. However, several surveys on teachers' attitudes towards the use of information technology indicate that two-thirds of educators have positive attitude towards the importance of ICT in teaching and learning process (Blair, 1997).

In the research of Yaghoubi (2004) in Zanjan University on access factors affecting internet use by faculty members, the result shows that respondents have a positive attitude towards the internet and there is a positive and significant relationship between internet usage and features such as computer skills, English language proficiency, age, occupation, number of scientific and research activities. Peckhamand and Iverson (1999) study, on the use of internet in Georgia Agricultural Education Programs, indicates that approximately 33% of teachers use the internet to search for agricultural research resources, gain access to training programs and receive training plan. The overall results of this study indicate that internet in university agricultural programs is limited in use.

In another study, Layfield and Scanlon (1999) investigate factors that encourage agricultural high school teachers to use the internet. The results showed that a significant relationship exists between education, field of study and age of educators with rate of internet use. It also became clear that the most significant factors, for the use of internet are some options such as: feeling comfortable when working with computers, time and interest in learning to use the internet, the existence of skilled people and experts in the field of internet in educational institute, having a partner who is skilled on the internet and finally access to a computer center with internet facilities.

Results from the study, ‘’Determining teachers' attitudes towards the internet and its use in Pennsylvania, America’’ showed that teachers' attitudes towards the internet does not have a significant relationship with its actual use (Layfield and Scanlon, 1998). Study on information-seeking behavior of faculty member of Iranian Research Organization for Science and Technology showed that the main motives why these people search for information on the internet are to do research work. Survey on the use of internet by faculty member of Medical Sciences of Iran, Tehran and Shahid Beheshti University showed that the highest percentage of internet users (82.7%) has less than 5 years work experience, and the professors use the internet more than other groups and academic ranks. In this study, the relationship between internet use and academic rank is significant (Hazrati, 1377). Panda and Mishra (2007), in their study, found that computers and e-mail have a significant and positive correlation with attitude to E-learning, and the most important motivational factor in the use of e-learning for teaching include: personal interest in the use of technology, intellectual challenges and availability of technical infrastructure.

Thus as described above, it is known that the internet is widely used in educational institutions in order to expand the quality and quantity of training and professional development. With recent advances in information and communication technology, application of the internet in teaching, learning and professional development of educators is essential. And since this can have an this important role in the professional development, the aim of

study is to investigate the role of internet in the professional development of educators.

Objectives of the research

The aim of this study is to explore the role of the internet in the professional development of agricultural educators. It highlights the problems that agricultural science educators face in the use of internet, what they think about features of the internet, types of knowledge they acquire in the use of information and communication technologies

METHODOLOGY

Census questionnaire was used in this study. Thirty five educators working in Agricultural Training Centers of Kermanshah, Province were interviewed to fill the questionnaire. This was sent to all persons and 30 of them completed and returned the questionnaire. The main instrument for data collection was structured questionnaire, composed of four major sections: demographic characteristics, ways of using the internet for the professional development, barriers to using the internet and their skills. Validity of questionnaire was approved by members of the Faculty of Agriculture Razi University. Cronbach alpha indicates that reliability of the data is about 86/0. SPSS version 19 was used for data analysis. Therefore, mean, standard deviation and coefficient of variation were used in descriptive statistics and correlation was used for inferential statistics.

FINDINGS

Individual and professional characteristics of educators

Age and literacy level

The results of the research showed that the average age of educators was 34.3 years and 80% of them have post graduate result. Educators with graduate level are in the second rank. It should be noted, that there was a PHD student in the study.

Internet accessibility of educators

About the internet accessibility of educators, the results showed that 26 educators (86.6%) at home and 12(40%) of them had access to the internet in the training center. In response to the question of whether they have a personal website, there were 22 negative responses and also in response to the question of having a personal blog, 24 (80%) did not have a personal blog.

Average hours of Internet use by educators

Average hours of internet use by educators were about 5.3 per week. Educators that often use the internet more than 5 hours per week had the highest frequency (46.6%).16 respondents (3/53%) use e-mail every day. Accordingly, it is obvious that the rate of internet users has been growing gradually in the last few years.

Fields of using the Internet in the development of professional educators

The results on fields of using the internet in the development of professional educators are shown in Table 1. The results show that the most important use of the internet by educators is to search for academic information (mean = 4.6). Others are, access to the newest information (mean = 4.53), access to learning opportunities (mean = 4.3), expansion of experience in order to achieve success in the job (mean = 4.3), knowledge about educational issues of the day (mean = 4.27).The results also show that least important is the use of the internet for entertainment (average = 2.93) and chatting (mean = 1.9).

The development of information technology at the university and society level requires preparation of some equipment. In other words, facilities should be provided to access the internet. The main barriers to the use of the internet are Low- speed internet (mean =3.6), paying to get the papers (mean = 3.57), problems to get specific subjects (mean = 3.37), limited resources to purchase computers (mean = 3.23) lack of time to make more use of the internet (mean = 3.2) (Table 2).

Attitudes of Agricultural educators toward features of the internet were assessed in eight items (Table 3). Result showed that overall, respondents had positive attitude to internet uses and abilities. The cost of using the internet is low compared to other reference sources (Mean = 4.67). Use of the internet is useful for educators (Mean = 4.6). Having a feeling to use the internet is an important factor for its uasage (Mean = 4.37). It should be noted that these results represent teachers who tend to apply this technology. Result about knowledge of educators from various fields of ICT is presented in Table 4. The result shows that respondents' knowledge of Yahoo (mean = 4.37) is more than the other cases and their knowledge of Google, Windows and Word are located in the next categories. Educators' knowledge of Excel was lowest (mean = 3.6).

Correlation between individual and professional characteristics with professional development of educators

Correlation between the independent and dependent variables showed a positive and significant relationship between age and development of professional educators. This means that educators who are older have more professional development. The findings also showed a

Table 1. The Internet's role in the professional development of educators and Fields of using the Internet (N = 30).

Variables	Mean	Standard deviation	Coefficient of variation
searching academic information	4.6	0.49	0.1
Access to the newest information	4.53	1.04	0.22
Access to the learning opportunities	4.3	0.65	0.15
Expansion of experience In order to achieve success in the job	4.3	0.83	0.19
access to the latest news of economic, political, etc.	4.3	0.84	0.19
Knowledge about educational issues of the day	4.27	0.9	0.21
Sharing ideas with other teachers	4.2	0.71	0.16
Searching information about Agricultural Sciences	4.17	0.79	0.18
Improvement of teaching skills	4.1	0.8	0.19
Acquiring information about the status of agricultural development	4.07	1.01	0.24
Getting motivation to work	4.03	0.92	0.22
access to global information	4.1	0.66	0.16
Improve their knowledge of English language	4.1	0.99	0.24
E-mail	4.1	0.8	0.19
Academic and scientific	4.1	1.18	0.28
To save time	4	0.91	0.22
To learn teaching methods	4	0.78	0.19
To read online journals and scientific articles	4	1.01	0.25
To learn new skills in practical farming	3.97	0.89	0.22
To keep interest for continue to teaching	3.77	0.97	0.25
Preparing for being creative and innovative	3.77	1.22	0.32
Facilitating the ability to think	3.87	1.01	0.26
Membership in the professional associations	3.6	0.96	0.26
Finding new subjects to offer to the students teaching Creative activities for the students	3.87	0.97	0.25
Finding the exercises and homework for students	3.4	0.96	0.28
Find questions for exams	3.5	1.07	0.3
Finding the lesson plans	3.7	1.31	0.43
Updating Personal Information	3.83	1.02	0.27
Access to the newest scientific findings in the special field of educators	3.93	1.05	0.27
Access to special books related to their field from the Internet	3.63	1.08	0.27
Offer advisory services to educators via the Internet	3.53	1.24	0.34
Correspondence with local experts in their field	3.9	1.38	0.39
Communicate with external experts in their field	3.73	0.99	0.25
using the Internet to check the students homework	3.43	1.3	0.37
Entertainment	2.93	1.61	0.54
chat	1.9	1.37	0.72

positive and significant relationship between teaching experience and professional development of teachers with 95% confidence. This means that teachers, with more teaching experience, have more professional development. There is a significant and positive relationship with 95% confidence between the level of education and professional development of teachers.

CONCLUSIONS AND RECOMMENDATIONS

The average teaching experience teachers have is about 6 years, which reflects their good working experience. The results indicate that the average age of teachers is about 35 years; the younger teaching force reflects the use of young people in educational centers. In terms of education, teachers with a bachelor's degree are the ones with the highest level of awareness and knowledge among all the educators. Average hours of internet use by educators are about 5.3 per week. This shows that most teachers have access to the internet and are interested in using it in their work. Therefore, adequate facilities must be provided to access the internet so that professional development may be achieved quickly. It

Table 2. Barriers to use of the Internet by educators of Agricultural Sciences (N=30).

Variables	Mean	Standard deviation
Low-speed internet	3.6	1.4
Pay to get the papers	3.57	1.27
Problems to get specific subjects	3.37	1.35
Limited resources to purchase computers	3.23	0.72
Lack of time to make more use of the Internet	3.2	1.15
Weaknesses in the way of Internet Search	2.9	1.39
Little knowledge of computers	2.63	1.27
Lack of skills in use of the Internet	2.5	1.22
It is difficult to learn the using f the Internet	2.23	1.19

Table 3. Teachers' attitudes about the Internet features (N = 30).

Variables	Mean	Standard deviation
The cost of using the Internet is low compared to other reference sources	4.67	1.24
According to the process of developments now a days use of the internet for professional development of teachers is an essential	4.6	0.77
Use of the Internet is useful for educators	4.6	1.03
Feeling the need for Internet is an important factor to use of it	4.37	0.8
use of the Internet leads to an increased interest in teaching	4.27	0.94
information on the Internet is Comprehensive and useful	4.2	0.92
According to the fast process of changes, Today, the Internet is critical in training activities	4.03	0.92
Use of Other educators from the Internet is an important factoring encouraging people to use the Internet	4	0.64

Table 4. Knowledge of educators from various fields of ICT (N = 30).

Variable	Mean	Standard deviation
yahoo	4.37	0.71
Google	4.3	0.7
windows	4.07	0.86
word	4	1.14
Power point	3.97	0.85
Excel	3.6	1.07

Table 5. the correlation between individual characteristics and professional The professional development of teachers.

Variable	correlation coefficient	sig
Age	0.425	0.019
Teaching experience	0.432	0.017
Education	0.56	0.01

should be noted also that 60% of respondents do not have access to the internet in educational centers. According to these findings, it is recommended that facilities should be given to teachers who have access to computers at home or in the workplace. Based on these findings, most of the statistical population uses the

internet to conduct research activities (scholarly articles search) and more than half of the statistical population has been referred to the internet once per day. This finding is in agreement with Hazraties's (1998) findings. Low speed and high cost of internet is a serious problem for educators. Therefore, appropriate policies can be applied in training centers to get better internet access. Adding lines and bandwidth also are ways to solve the problem of low internet speed. Teachers in this study mentioned the internet as an important tool for increasing their access to information and professional development. As shown in Table 1, most educators use the internet to access articles and information that demonstrate professional growth among them. And despite the many obstacles in the process, it is suggested that this is an important instrument that should be available to educators.

Considering the obstacles faced by educators, it is suggested that this useful instrument should be provided and must be acknowledged that the development of internet usage is one of the pillars of professional development of educators. Results showed the educators' knowledge of Yahoo and Google, because they use these programs to communicate with others and ease their communication. The remarkable thing is that the future of educators' work and survival of the organization largely depends on the mastering and use of these new technologies. Therefore, the educational centers organizing training courses provide professional and efficient use of the internet. Results of correlation analysis revealed that there was statistically significant and positive correlation between the age, level of education, educators' teaching experience and professional development.

This means that with an increase in age, level of education and teaching experience, professional development of educators will also increase. This shows the importance of long-term training programs for educators. Then, it is possible to state that with increasing age, educational level and years of teaching experience, it can be concluded that the effort and experience of teachers is more to professional development. These findings of the study are in agreement with the findings of Yaghoubi (2004) and Layfield and Scanlon (1999).

The general inferences that good educators' attitude to the internet is one of the main preconditions for the use of these technologies by them. So the time has come to apply these technologies in education and it is suggested that to stabilize and strengthen positive attitudes in the use of internet, the material and moral incentives that commensurate with the educational level of teachers should be provided. Although the findings showed that a majority of respondents have considerable knowledge of the internet and its features and due to its important role in the present age, it is recommended to hold training courses to learn how to use the Internet.

Conflict of Interests

The author(s) have not declared any conflict of interests.

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