The Relationship of ICT with the Development of Creative Thinking among Staff of Mazandaran University of Medical Sciences

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Abstract

Background: Today along with the increasing development of sciences and technology and extensive flow of information, people of the society will require certain skills. The aim of this study is to investigate the relationship between using the information technology and communication on the development of creative thinking, including the ability in flexibility, expansion and creativity in the staff at Mazandaran University of Medical Sciences.

Methods: In this applied, descriptive and correlational investigation, the study subjects were all of 450 staff at the Mazandaran University of Medical Sciences University head quarter in 2011. Based on Morgan sample table, 210 samples were selected by random sampling method. The statistical analysis of the data was done by descriptive and inferential statistics, using SPSS software. Pearson correlation test was used to determine the correlation between the impact of information and communication technology on creativity.

Results: The obtained results indicate that there is relationship between the use of information and communication technology and creativity.

Conclusion: Same result is observed between the use of information and communication technology with increase of capability, expandability, reliability and flexibility in the staff.

Keywords: Technology, Information and communication technology, Creative thinking.
Introduction:

Nowadays, regarding the learners' needs and social conditions, it is obviously needed to revise and reconsider the traditional methods and approaches in teaching. The problem solving approach is one of the new ways in Teaching and learning process(1). The learning styles are the distinctive learners' strategies for information processing and discovering new concepts(2). Both academics and practitioners agree that critical thinking skills are necessary to provide safe and comprehensive nursing care. In order to promote the development of critical thinking, nurse educators need to keep the teaching/learning process captivating and interesting using active learning environments. These can be implemented by using modern information and communication technologies that are simple, fun, and time and cost effective (3). Entry into the field of information technology and the emergence of information technology has revolutionized all aspects of human life. The qualitative and quantitative procedural terms as a result of this change, has modified the traditional method of teaching at the universities. This type of training is the foundation of the application of technology, communication and psychological concepts, professional and academic, which is formed based on the criteria and common metrics related to the objectives, needs and realities of their communities. Training using new technologies in the short time that has passed, since the introduction of the teaching methods has been changed to high level, Education, the key to the future, has long been expected that the education trains next generation to live in the society of tomorrow (1). Developments in the field of education is to such an extent that, the educational system is based on participation and more importantly, to the virtual classes and, using the most advanced information technologies (2). In today’s world, as the pace of change increases, the complexity of the issues also increases. The more complexes of issues, the more time needed to resolve them. The more pace of change is faster, things are more varied and solutions for which we have developed are done in shorter period. In the era of change, people progressively begin to understand and feel their creative ideas, with the difference that, not beyond the creative ideas of their minds, but the ideas are from their own and rises from their mind. General policy of education should be flexible and the alternative programming should replace the contingency planning. The main purpose of education is the creation of dynamic and creative people able to do new work, beings explorers and innovators. This current situation is more plausible in the third millennium ”(3). Therefore, have no choice but to make people with unique skills and ability. If we want growth and development of intellectual abilities in the people, we have to think about breeding our intellectual dispositions (4). Creativity is the most beautiful and the most amazing feature of man. Dynamics characteristics of each culture and civilization are related to the creativity of its people.
Now, at the beginning of the third millennium, dare to say that, creativity is what modern human life is separated from the early life of the first man (5). For creativity, it is necessary to provide context. Creativity requires multi–dimensional infrastructure and the integrated management could be the source of globalization. Creativity is the only condition for the survival of societies and cultures today (6).

Today the educational content is not only available in the textbooks, but staffs using a range of media, including the Internet and e-books have digital literacy, critical thinking, effective communication and high productivity (7). On this basis, and given the importance of globalization and the role of IT in organizations, it is clear that in the present complex world of competing, those organizations are successful that are ahead of time, but is not possible without increase of creativity and innovation. Hence, this research determines to investigate the relation between the information and communication technology on the creativities of the staffs at Medical University of Medical Sciences.

1. Material And Methods

In this applied and descriptive correlational study, the study subjects were all of the 450 staffs (327 males and 123 females) at the Mazandaran University of Medical Sciences Head Quarter Surveyed in2011.). According to Morgan table, 210 subjects (153 males and 57 females) were selected. To collect the required data from the library and field methods, the questionnaire measuring IT knowledge and the Torrance creativity questionnaire were used. IT knowledge questionnaire comprised 27 items designed in five scales of Likert (very high, high, medium, low and very low). Torrance creativity questionnaire (Torrance creativity test, 1974), consists of 60 questions that features a variety of creative thinking (creativity, flexibility, expansion and fluid). The validity of the questionnaire was approved by the consultants in adding and deleting some contents. To ensure reliability of IT knowledge test, 30 subjects were tested, and through Cronbach alpha reliability, was equal to 8779.0, indicated high reliability and internal consistency of questionnaire. Current Torrance creativity Questionnaire was used by Abedi(8) (1984) on the 650 third graders guidance school students at Tehran and through test-retest reliability was as follow: for the fluid part 85%; creativity 82%; flexibility, 84 %; and extension, 80%. These values indicated high reliability and internal consistency of the questions in the questionnaire. In this study, descriptive and inferential statistics using SPSS software was applied for analyzing the obtained data.
RESULTS

Result of first question (Is there relationship between the use of ICT and the fluency capability?) showed the value obtained for P - value, (sig=0.000), At 95 percent is less than the significance level (α=.05), So statistically it could be claimed

that with 95 percent positive correlation between the use of ICT and the fluency lining with the value of this correlation is 0.58. (Table 1)

Table 1. Relationship between the use of ICT and the fluency

<table>
<thead>
<tr>
<th>No</th>
<th>Indices</th>
<th>F</th>
<th>The correlation</th>
<th>DF</th>
<th>Critical table</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Is there relationship between the use of ICT and the fluency capability?</td>
<td>210</td>
<td>0.584</td>
<td>209</td>
<td>0.135</td>
<td>0.000</td>
</tr>
<tr>
<td>2</td>
<td>Is there relationship between the use of ICT and expandability?</td>
<td>210</td>
<td>0.636</td>
<td>209</td>
<td>0.135</td>
<td>0.000</td>
</tr>
<tr>
<td>3</td>
<td>Is there relationship between the use of ICT and the innovation ability?</td>
<td>210</td>
<td>0.626</td>
<td>209</td>
<td>0.135</td>
<td>0.000</td>
</tr>
<tr>
<td>4</td>
<td>Is there relationship between the use of ICT and Flexibility ability?</td>
<td>210</td>
<td>0.602</td>
<td>209</td>
<td>0.135</td>
<td>0.000</td>
</tr>
<tr>
<td>5</td>
<td>Is there relationship between the use of ICT and creativity?</td>
<td>210</td>
<td>0.69</td>
<td>209</td>
<td>0.135</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The value obtained for P - value, (Sig=0.000), at 95 percent is less than the significance level α= (.05), so statistically it could be claimed that with 95 percent positive correlation between the use of information and communication technology and development capabilities, which is the value of this correlation .64. The value obtained for P - value, (Sig=0.000), at 95 percent, Less than the significance level α= (.05), so statistically we can claim that with 95 percent positive correlation between the use of ICT and innovative capability exists, the value of this correlation is 0.63. The value obtained for P - value, (Sig=0.000), at 95 percent, less than the significance level α= (.05), so statistically it could be claimed that with 95 percent positive correlation between the use of ICT and Flexibility ability. The value obtained for P - value, (Sig=0.000), at 95 percent, less than the
significance level $\alpha= .05$), so statistically it could be claimed that with 95 percent positive correlation between the use of ICT and Creativity. (Table 1)

**Discussion**

The results of this study agree with the data obtained by Nakhaei (9) (2014), Roozgar Marvdashti et al (10) (2009), Rezaei Rad (11) (2009), and Abedi (8) (2006) are aligned. Studies show that investment in the training of human resources could have a significant role in reducing this gap as an important means of communication and information technologies for the processing of information. According to the data obtained from this study it could be concluded that:

1. Data analysis of a number of specific questions at 0.05 and 95 percent of respondents’ use of information technology and communication, enhancing the effective fluency evaluation, and the average attitude is greater than mean class, in other words, they have a positive attitude towards the special question.

2. Data analysis of a number of specific questions has shown that at 0.01 and 99 percent of respondents’ use of information technology and communication, enhancing the expandability evaluation, and the average attitude is greater than mean class, in other words, they have a positive attitude towards the special question.

3. Data analysis of a number of specific questions has shown that at 0.05, 95 percent of respondents’ use of information technology and communication, enhancing the innovation ability and the average attitude is greater than mean class, in other words, they have a positive attitude towards the special question.

4. Data analysis of a number of specific questions has shown that at 0.01 and 99 percent of respondents’ use of information technology and communication, enhancing the effective flexibility ability, and the average attitude is greater than mean class, in other words, they have a positive attitude towards the special question.

5. Data analysis of a number of specific questions has shown that more than 0.95% of respondents in use of information and communication technology have positive evaluation in promoting of creativity and mean attitude, is more than the mean class, in other words, with respect to the specific question, they have a positive attitude.
Author's contribution:Ali Yazdanpanah Nozari made considerable contribution to the conception, data collection, design, drafting the article and critical revision. Hasan Siamian, second author (ORCID ID - 0000-0002-3542-5995) made considerable contribution to the conception, drafting the article and translation from Persian language to English language, translation of citations and Critical revision.

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References:


