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A STUDY ON THE ASSESSMENT OF ICT COMPETENCY REQUIREMENTS OF HIGHER EDUCATION GRADUATES AND THEIR EMPLOYERS' ASSESSMENT OF ICT KNOWLEDGE REQUIREMENTS

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Resume

This article examines the relationship between the knowledge and skills of students studying in the final year of higher education, i.e. acquisition of skills in the field of communication technologies, and the qualification requirements of their employers when offering them a job. Based on the conducted empirical studies, proposals and recommendations have been developed.

Key words: Information communication technologies, modern education, employer, job candidate, student, application form

In the world of new technologies the needs of labour market for qualified and skilled employees are rising and the qualificational requirements for new job seekers (job applicants) or senior students in mastery of ICT skills in a certain work place are inevitably increasing. There is a need to explore the similarities and differences between the ICT knowledge and skills that employers expect from undergraduate and graduate students, which competencies are more important, and the relationship between them. In this study, it can be determined what knowledge and skills the graduate students need to acquire in the future. Also, it will be possible to find out what ICT knowledge is important for employers in the labor market.

For getting some answers whether the employers requirements and potential employees ICT skills comply, we conducted some questionairy among employers and students of higer institutions in this area. The questionaire is given in table 1. It

contains 43 questions which are graded between 1 to 10. The grading system is based the expectations of the employer how much knowledge and mastery they need for a certain job offer. 1 is the lowest mastery level is needed and 10 is the highest level of expectance of the employer for matery of a certain qualification from a potencial job seeker (an applicant). These questions are to determine the needs of employers at some grade to hire or not a new worker to a new position. For instance, question 14 “ablility to identify relevant information by evaluating various sources and their origins.” is for employers who seek for workers who can navigate and sort out data and find relavant and trusty ones.

Table 1.

Questionaire for employers to grade new workers` skills for ICT mastery

As an employer, how do you think an applicant for a job should master these qualifications? Please grade from 1 to 10 (1 is the least important …10 is the most important)	I would require mastery from the applicant[1] (1-10 point)
1. An applicant should be able to use various types of operating systems installed on computers (Microsoft Windows, Linux, Mac, ..) and mobile devices (iOS, Android, BlackBerry OS, ...).	
2. The person willing to work should be able to use various mobile devices (Smartphone, Tablet, PDA, ..).	
3. An applicant should be able to use various types of operating systems installed on computers (Microsoft Windows, Linux, Mac, ..) and	

[1] Every employer requires the knowledge of ICT from the person who wants to get a certain job. The rating ranges from 1 to 10. 1 is the lowest, 10 is the highest. For example, I would ask a job seeker to ask a question for a grade x. That is, if he knows x, it is concluded that he agrees to hire a person who wants to work

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mobile devices (iOS, Android, BlackBerry OS, ...).should be able to browse the Internet with different browsers (Internet Explorer, Mozilla Firefox, Safari, Opera, ...).	
4. An applicant should master various office tools for processing information, for example, word processors, spreadsheets, databases, ...	
5. An applicant should be able to learn and solve problems in systems and applications (email setup, antivirus setup, hard disk defragmentation,…).	
6. An applicant should be able to use various digital image, audio or video processing tools.	
7. An applicant should be able to communicate with other people via the Internet using synchronous means of communication (Zoom, chat, instant messaging services, Skype, ...).	
8. An applicant should know how to create web pages using computer programs, including text, images, audio, links, etc.	
9. An applicant should know how to use collaborative software using online Groupware tools (Google Apps, BSCW, OpenGroupWare, ...).	
10. An applicant who wants to work should master Web 2.0 tools for sharing and publishing on the Internet (Blog, Slideshare, Youtube, Podcast, ...).	
11. An applicant should be able to use software used in enterprises (1C, UzASBO, SAP, etc.).	
12. An applicant willing to work feel competent with the help of virtual management of the enterprise (virtual secretary, virtual government, ...).	
13. An applicant should be able to find information through various sources and databases available on the Internet.	
14. An applicant should have an ability to identify relevant information by evaluating various sources and their origins	

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15. An applicant should be able to organize, analyze and ethically use information from various sources and media.	
16. An applicant should be able to synthesize selected information using tables, graphs, or charts to construct and assimilate new content.	
17. An applicant should be able to use graphic organizers and software to show relationships between ideas and concepts to make conceptual and mind maps (CmapTool, Mindomo, ...), diagrams or schemes.	
18. An applicant should be able to plan the search for information to solve problems.	
19. An applicant should be able to identify problems and/or identify research questions using ICT.	
20. An applicant should be able to use resources and digital tools to explore current world issues and solve personal problems, social and professional needs.	
21. An applicant should know how to analyze the possibilities and limitations of ICT resources.	
22. An applicant should be able to configure and troubleshoot hardware, software and network systems to optimize for training and production.	
23. An applicant should know how to share information of interest with colleagues using various media and digital media.	
24. An applicant must be able to effectively communicate information and ideas to multiple audiences using a variety of media and formats.	
25. An applicant should be able to develop cultural understanding and global awareness by interacting with other students and people from other cultures.	

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26. An applicant should know how to use computer programs (SlidShare, Google Docs) and technological tools to manage and communicate information with colleagues and other users on the Internet.	
27. An applicant should be able to coordinate group activities using the tools and tools of the Internet.	
28. An applicant should know how to communicate with other colleagues and users using ICT-based social networks (Facebook, Ning, Twitter,...) and communication channels (Blog, YouTube channel, ...).	
29. An applicant who wants to get a job should be able to work in professional networks (Linkedin, ...).	
30. An applicant should be able to design, create or modify a Wiki (Wikispaces, Nirewiki, ...).	
31. An applicant should know how to use social pages (bookmarking) to find, save and mark Internet resources.	
32. An applicant must assume ethical responsibility in the use of digital information and ICT, including respect for copyright, intellectual property, and proper attribution.	
33. An applicant should promote and practice safe, legal and responsible use of information and ICT.	
34. An applicant must demonstrate personal responsibility for ICT-assisted lifelong learning.	
35. An applicant must be competent to constructively criticize, evaluate and contribute to the ICT work developed by colleagues.	
36. An applicant should be able to lead his colleagues in digital technologies.	
37. An applicant should be able to positively respond to the use of ICT to support collaboration, learning and productivity.	

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38. An applicant should have the ability to imagine original, new and useful ideas with the help of ICT.	
39. An applicant should be able to create original works using traditional and new ICT resources.	
40. An applicant should be able to identify trends that predict the possibilities of using ICT.	
41. An applicant should be able to use models and simulations to study complex systems and topics using ICT.	
42. An applicant can develop materials that support the strengthening of the knowledge, creative use of ICT	
43. An applicant should be able to adapt to new situations and technological environment.	

In this study we conducted this survey amoung various private businesses, state organizations and ministries. The population of this questionairre consists of 100 units. Four types of questions were formulated to find out if there is linkage amoung domain, importance and the employers` requirements. The questions and answers are given below:

1) Is there direct link between the domain and the employers` requirement for acceptance to new job in ICT?

• 26 items match in whereas 17 items have no link between each other.

2) Is there direct link between the importance (in students` perception) and the employers` requirement for offering a new job in ICT?

• 28 items match in whereas 15 items have no link between each other.

3) Is there direct link between the domain (students`) and the importance (in students` perception) of ICT?

• 41 items match in whereas 2 items have no link between each other

4) Is there direct link between the domain (students`), the importance (in students` perception) and employers` requirement for ICT to offer a new job?

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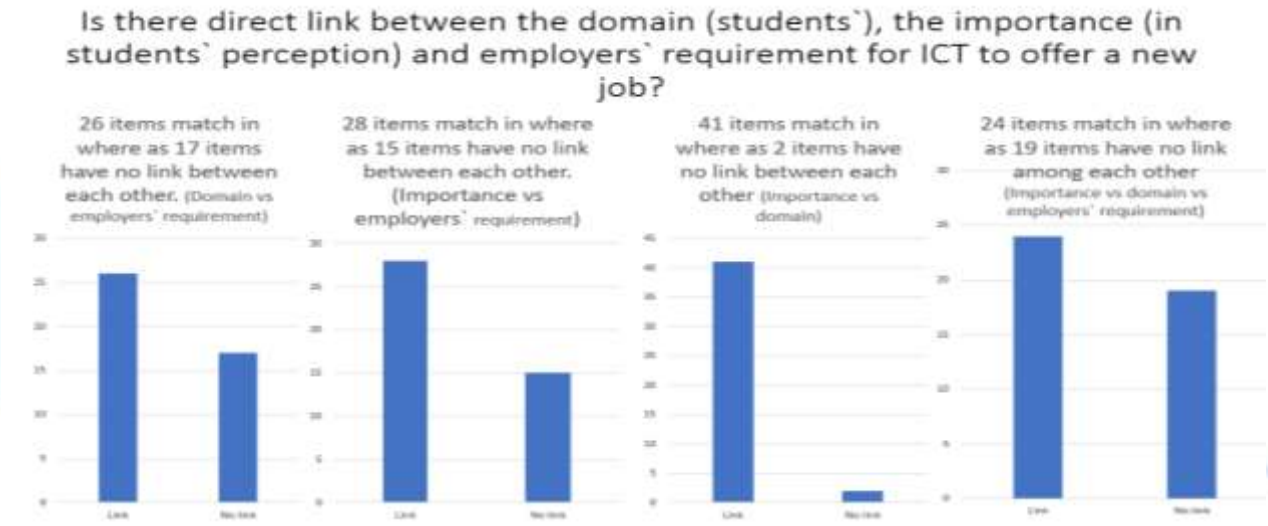
• 24 items match in whereas 19 items have no link among each other



1 figure. The results of the survey conducted amoung employers

In figure 1 (the last two bar charts) we can observe that employers` requirements and domain of the applicants and importance of such qualifications in senior students` perception in 24 questions match. In 19 questions they don`t comply among themselves. This may be due to the specific areas job requirements which sets high level of mastery for example question 36 “An applicant should be able to lead his colleagues in digital technologies.” or 41 “ An applicant should be able to use models and simulations to study complex systems and topics using ICT.” Overall in crucial areas which are common for most industries and state organizations comply in answers and grading. That is a very good indicator which says senior students domain od a certain qualifications are in right course with the expextations of employers.

The analysis of the perceptions of the students of the Faculty of Economy of the Karakalpak State University on ICT competences gives a first view of the phenomenon, providing information on what the level of ICT competencies of current students in this Faculty is, but it would be necessary to delve deeper into other aspects such as the perspective of the teaching staff and the perspective of the companies, that is, the opinion of the professors and entrepreneurs on the level of mastery in these competences that the students and workers possess, and the importance that teachers

and entrepreneurs give to possessing those skills to enter the labor market. This study should also be extended to other Faculties and other degrees. Students, future workers, must be trained in the knowledge and use of new technologies, essential tools today in the world of work. These ones must develop creativity, communication, research, information management, problem solving, decision making and the concept and functioning of ICT, competences evaluated through the questionnaire; so the study programs should be able to foster an attitude of learning ICT skills that can be developed with years of study and professional practice. In addition to being able to relativize the acquisition of these ones, seeing the link between the importance given to the acquisition of those skills for future work performance and the mastery of them.

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