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Üniversitede Okuyan Uluslararası Öğrencilerin Akademik Dijital Hazırbulunuşluk Düzeylerinin İncelenmesi

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Özet: Dijital teknolojiler, öğretme öğrenme sürecinde öğrencilerin aktif katılımı için bilinir. Bu nedenle dijital yeterlilik hem akademik başarı için hem de kendi kariyerlerinde kullanılmak üzere herhangi bir düzeyde üniversite öğrencileri için gereklidir. Bu çalışmanın amacı, üniversitede okuyan uluslararası öğrencilerin akademik dijital hazırbulunuşluk düzeylerini araştırmaktır. Bu araştırmanın katılımcıları, Afrika, Amerika, Asya ve Avrupa kıtalarından farklı fakültelerde, seviyelerde ve yıllarda öğrenim gören Gaziantep Üniversitesi Uluslararası öğrencileridir. 288 öğrenci (%64.2 erkek ve %35.8 kadın) üzerinde nicel tanımlayıcı bir anket yapılmıştır. Bu ölçek, Hong ve Kim (2018) DRAE ölçeğinden türetilen 17 madde ve 5 alt ölçek içermektedir; dijital medya bilinci, dijital araç uygulaması, bilgi arama becerileri, bilgi paylaşım davranışı ve dijital uygulama kullanımı. Bulgular, büyük ölçüde uluslararası üniversite öğrencilerinin dijital teknolojilerin akademik alanda kullanımına hazır olduklarını ortaya koymuştur. Bulgular, katılımcının cinsiyeti, coğrafi bölgesi, öğrenme yılı, öğrenme düzeyi ve öğrenim gördüğü fakülte konularında anlamlı farklılıklar ($p \leq 0.05$) olduğunu göstermiştir. Çalışmada, öğrencilere ekstra dijital teknoloji ile ilgili derslere programda yer verilmesini ve lise öğrencileri tarafından dijital teknolojiye erişimin üniversite düzeyinde kullanımına ortam hazırlamasını önerilmiştir.

Anahtar kelimeler: *Dijital Hazırbulunuşluk, öğrenci katılımı ve Uluslararası öğrenciler.*

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Investigating The Digital Readiness For Academic Engagement Of International University Students

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Abstract: In this study, it was aimed to investigate the relationship between the levels of loneliness, solitude with self-esteem and the predictive effect of self-esteem on the levels of loneliness and solitude preferences. The sample group of the research consisted of 428 students, 271 of which were female and 157 of which were male, studying at Çukurova University. UCLA Loneliness Scale, Rosenberg Self-Esteem Scale, Preference for Solitude Scale and personal information form were used in the study. In the analysis of the data, SPSS 20.00 program was used. It was revealed that there was a positive relationship between students' loneliness and levels of solitude preference (r = 0,325), and there was a negative relationship between self-esteem level and loneliness (r = -0,488), and solitude preference (r = -0,215) level. The regression analysis showed that the self-esteem levels of the students explained 23.6% of the change in loneliness levels and 4.4% of the change in the level of solitude preference. On the other hand, it was concluded that the level of solitude preference explained 10.3% of the change in the level of loneliness. It was determined that loneliness, solitude preference and self-esteem levels did not differ among university students according to their gender, grade levels and housing.

Keywords: *Digital readiness, Student engagement, International university students.*

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Introduction

In the 21st.century the educational sector has been invaded by the machine world which is traced from 1600s followed by the industrial revolution of 18th.century, machines are being utilized in almost all aspects in the teaching learning process i.e. in lesson planning, lesson development and lesson evaluation. This era is known as the digital era thus every aspect is being digitalized. According to Daniels (2002) information and communication technology came within a very short period, however it has become one of the vital construction blocks of the present modern society. Presently every nation takes understanding ICT and mastering its fundamental skills and models as part of the core of education alongside writing, numeracy and reading. Knowledge about the digital technologies usage in university life is essential for academic achievement (Goode, 2010).

Improvements in technology in universities play an important part in the increment of university learners' engagement, this is through communication with their fellow students, academic & non-academic staff (NSSE, 2013). Students can exploit a variety of digital technologies like plagiarism detection tools, learning management systems, word processors, and spreadsheets and e-portfolios among others (Henderson et al. 2015: Goode, 2010). University learners employ their digital devices in a variety of academic endeavours for example in identifying course syllabi and materials, communicating with their professors for clarification and more explanation on various topics, completing assignments among others (NSSE, 2013: Goode, 2010). Looking at the value of digitalization, NSSE testified that learning with aid of technology devices and courses that enriched learners' understanding and technology usage were positively linked with learners' academic engagement, they included higher-order learning and philosophical and integrative learning among others (NSSE, 2013). Student engagement in various academic fields have a tendency to be boosted by the embracement of ICT for digitally knowledgeable learners, who are skilled with technology from the technology rich environment (Jones, 2012). Gaziantep University with a vision of being a world university which has a high international competition capability in educational and scientific undertakings was established in 1973 and it is one of the modernized universities in Turkey which has tried to cop-up which the prevailing digital world forces, it has students from about 108 countries from Africa, Asia, South America, Australia and Europe, the question here was whether these students from different parts of the world ready for the digitalization of the education field despite its importance in the field and availability at the university. Therefore the study focused on the investigation of digital readiness of international students in Gaziantep University for academic engagement. It studied 5 elements/measures of digital readiness for academic achievement of university students i.e. Digital Tool Application (DTA), Digital Media Awareness (DMA), Digital Application Usage (DAU), Information-Sharing Behaviour (ISB) and Information-Seeking Skills (ISS) using the scale developed by Ah Jeong Hong and Hye Jeong Kim DRAE scale (2018).

Literature Review

European Parliament and Council (2006) viewed digital competence as a vital skill for lifelong learning in this era. This is because digital competence involves the confident and critical use of information sector for academics, leisure, communication and work among others. The utilization of digital devices to access, store, retrieve, produce, assess, communicate and take part in collaborative networks using Internet and share information necessitates university students to have new digital competencies including the capability to produce, process, look for and communicate information and fluency in technologies (Radovanovic´ et al. 2015), this is because they utilize such competence in their academic endeavours. It is emphasized that students must have access knowledge via ICT to keep pace with the latest developments in various sectors (Pelgrum, Plomp & Law, 2007). The application of digital technology improves students' performance, facilitates teaching as well

as administration and develop pertinent skills in the underprivileged societies (Sharma & Bottino, 2003). Depending on the current needs of the society, knowledge about digital technologies usage in university life is essential for academic success/achievement (Goode, 2010). Phases of learning are experiencing continuous modifications with the existence and evolution of the Internet and relevant digital media and education at universities is chiefly influenced by these modifications (Andrews and Haythornthwaite, 2011). University learners employ their technology devices to find out the course syllabi and materials, to review the past lecture videos done during their presence or absence, to keep in touch with people at the university this may be lecturers or fellow students, to complete lecture room surveys and tasks and to look for information necessary for the improvement of their understanding and increment of their knowledge (Goode, 2010). Despite the fact that digital technology is important in the university life, internet and digital devices' adoption across population segments has been uneven. For instance Pew Research Centre of late reported that some individuals are unable to effectively utilize the internet and digital devices for key activities like applying for scholarships, uploading videos, looking for jobs among others. University students may be facing similar challenges. Here two points are put into consideration: First, different university learners have varying levels of preparedness for using the available advanced technologies. Second, reality can lead into the varying levels of utilization of new technologies as they diffuse in the university community. These variances may eventually raise the possibility that uneven adoption and application of technology could have negative impacts like poor performance of students for those who are not facile and comfortable. Since 1990s, inequalities in technology adoption have been known as the "digital divide". But in recent times there has been an axis in the technology implementation debate that looks at students' readiness like their trust in technology and digital skills that can inspire their utilization of digital tools. The term often used is "digital readiness" (Smith, 2014). When educators think about digital readiness, it is mainly about whether students have the skills to use information technology in their academic life, as well as the digital literacy tools. (Yoemans, 2016). Blayone, Kavtaradze, Kokhan, vanostveen and Barber (2018) in their study about digital readiness of university students in Ukraine and Georgia for academic engagement, hypothesised ICT as an educational pathway to democratic revolution, while using Digital Competency Profiler, their findings reveal that great percentage of Georgian and Ukrainian students were ill-prepared for many online-learning activities.

Previous studies signified the value of digitalisation in the academic field, however none of them had been done specifically international students some of whom are coming from low developed countries, while others from war affected countries and this study put them into consideration.

Methodology

The study employed a quantitative descriptive survey research design. Simple random sampling technique was employed to select 288 international students studying at Gaziantep University in year 2018-2019, they were selected irrespective of their age, country, faculty, level of study or year of study and involved in the study. Designed questionnaires with demographic data and 17 items of DRAE scale in order to capture all kinds of international students they were designed in 3 languages and distributed using both online and printed out copies.

The items on the questionnaire were developed by Hong and Kim (2018) with guidance of the adapted framework of Guzman-Simon et. Al (2017) taking into account ICT literacy, digital literacy, media literacy and computer literacy in line academic engagement. In the beginning they were 20 items including the programing skills but 3 were deleted maintaining digital skills (7 items), digital media ability (3 items), and information literacy skills (7 items), the validity of the subscales was addressed by conducting an exploratory factor analysis (EFA) with Promax rotation of all the seventeen DRAE items, which yielded five factors for digital

tool application, digital application usage, information-sharing behavior, digital application usage, and digital media awareness then confirmatory factor analysis (CFA) was performed to affirm the results of the EFA. Principal components analysis with Promax rotation is appropriate because this factor analysis extracts possible factors and examines construct validity when the constructs are assumed to interact with one another. To determine the number of factors, we examined a scree plot with the cut-off value of the eigenvalues (1.0). The EFA was repeated after the removal of a logically inappropriate item. We extracted five factors that exhibited relatively high factor loadings (.6 or above). The five factors accounted for 63.54% of the variance. Each factor included at least three items. The factorability of the correlation matrices was evaluated using the Kaiser–Meyer–Olkin. Reliability analysis was conducted by developers of the scale in 2018 conducted a Cronbach's alphas and the result for all the 17 items in the scale was .874, the researcher in this study also conducted the Cronbach's alphas for all the 17 items in the scale and the result was .828 which shows that the internal consistency is good.

Data was collected from male (64.2%) and female (35.8%). 53.8% of the participants were from Middle East, Africa (31.3%), Rest of Asia (13.9%) and other regions (1%). 28.1% of the participants were studying at faculty of education, faculty of engineering (18.8%), economics (17.4%), medicine (11.5%), theology (7.6%) and others (16.7%). 61.1% of the participants were studying bachelors level, language preparatory school (26%), masters (11.5%) and doctorate (1.4%), 57.3% of the participants were in their first year, second year (19.4%), fourth year (12.5%) and third year (10.8%).

In order to determine the degree at which international university students are ready to digitalisation in the academic field, SPSS software was used to analyse data, frequency tables generated, independent sample T- Test and ANOVA test conducted.

Findings and discussions

Availability Of Digital Devices And Daily Internet Usage

Findings showed that 94,4% of the respondents had smartphones, 58.3% had laptops, 17% had iPads, 9.7% had desktops, 3.1% had televisions and 0.7% had radios, it was also discovered that some of the respondents had multiple possession of devices. It further showed the number of hours spent by the respondents on internet daily that is, 4.9% spend less than an hour on internet, 27.4% spend 1-3 hours on internet daily, 33% spend 3-6 hours daily on internet and 34.7% spend more than 6 hours on internet daily.

Globally it is believed that over a billion people use smartphones, Turkish statistical institute (2018) shows that 98.8% of people living in Turkey use smartphones, 75.3% of individuals aged 16-74 use the internet in Turkey. In this study out of the participants 94.4% had smartphones, this is slightly lower than the study made by Bavlı, Katra and Günar (2018) who were investigating about smartphone addiction among university students whose participants 100% of them had smartphones.

Measures of Digital Readiness of University Students for Academic Engagement

In order to identify the extent at which international university students are digitally ready for academic engagement, questionnaires were administered and the participants' responses were as presented and discussed below;

For digital tool application subscale, findings showed that 32.3% of the respondents couldn`t whereas 45.8% could fix a computer virus or malware on their computers, 1.4% couldn`t and 91.7% could upload and download media including online photos, files, video files and sound files, 9% couldn`t while 77.1% could manage software or apps from a computer or mobile

services, 22.9% couldn`t while 60.7% could set up and change security options on web browser.

The findings revealed that below average (45.8%) could fix a computer virus or malware on their computers but majority (91.7%) could upload and download media including online photos, files, video files and sound files seconded by Kumar (2011) who showed that students were downloading online lectures and reading from e-books to improve learning and 77.1% could set up and change security options on web browser, This shows are better than the those participants in a study conducted by Moallem (2017) in Silicon Valley in California about cyber security awareness among college students whose findings show that only 20% were knowledgeable and 33% who were not knowledgeable about cyber security and setting up security options on web browsers.

For digital application usage subscale, findings also showed that out of the respondents 9.7% couldn`t where as 78.8% could use the fundamental functions of a presentation program (e.g. Microsoft PowerPoint) for class presentations, 10.1% couldn`t while 76.1% could use fundamental functions of word processing programs to create and edit documents for class assignments, 15.2% couldn`t but 69.1% could use spreadsheet programs (e.g. Microsoft excel) to handle data and analyze it in class assignments.

Majority of the international students at Gaziantep University had the ability to use the fundamental functions of a presentation program, word processing programs to create and edit documents for class assignments and use spreadsheet programs (e.g. Microsoft excel) to handle data and analyze it in class assignments . This is because presentation programs like PowerPoint offer the convenience of doing old tasks in more creative ways. When comparisons were made basing on the year of study of the participants, those in first years had less skills in using spreadsheets similarly to the findings of Lim (2005) on first-year university students' ability to use spreadsheets shows that the students in first year had less skills of using spreadsheets compared to word-processing hence our finding are in line with his study

For digital media awareness subscale, findings shows that 23.6% couldn`t while 50.4% could recognize the bias or rumors in digital media content, 26.4% couldn`t but 42.7% could critically interpret digital media content, 25.3% do not yet 47.9% do know how to protect intellectual property rights when they use digital media content.

The findings shows that an average percentage (50.4%) of the participants could recognize the bias or rumours in digital media content, below average (42.7%) could critically interpret digital media content and below average (47.9%) could protect intellectual property rights while using digital media content. These findings are low but higher than that of Ayatollahi et. al (2014)’s findings as 19.3% of students were very confident about accuracy of internet contents. So it is very important that individuals at all levels and ages from different faculties and geographical region be educated about what personally identifiable information is and what they should not and should share via online social networks (Flinn, 2009).

For information seeking skills subscale, the findings shows that 8.4% couldn`t whereas 71.5% could use a variety of available options to search for information that my colleagues are not aware of, 1.4% couldn`t but 76% could inform their classmates about the different ways to effectively search for information, 13.2% couldn`t and 63.5% could generate keywords to search information for academic work

The findings shows that majority of the participants are good at information seeking skills, these findings are in line with the findings of Baro, Onyenania and Osaheni (2010) on their study about information seeking behaviour of undergraduate students in the humanities in three universities in Nigeria, they found out that students use various sources such as textbooks both online and printed, journals, internet and human resource for information and

they also found out that students use various strategies like chaining, browsing, differentiating, monitoring and extracting. After knowing all these sources and searching/seeking strategies.

Finally for information sharing behaviour subscale, the findings shows 11.8% couldn`t whereas 70.3% could interact with classmates using the real-time communication tools for example video conferencing tools or messengers, 7.6% couldn`t but 72.9% could share their opinions online for example with blogs, social networking services or webpages, 10% couldn`t while 85.9% could share their files with their classmates using online software, 3.4% couldn`t while 85.4% could collaborate with classmates using online software. This percentage is high similarly to a study made by Hussain (2012) on evaluation of the social media trends among university students shows that majority of the university students join social media and internet interacting channels for purposes of learning (76%), networking with others (87%), enjoying and sharing their opinions (92%), friending (73%) and getting information (92%). It is not a surprise that the international students at Gaziantep University possess a high level of information sharing behaviour. Similarly to the findings of Yuen and Majid (2007) the students in their study generally documented the significance of sharing knowledge with their peers.

Sıgnıfıcant Dıfferences Between Dependent Varıable Groups For The Drae Subscales

Independent Samples T-Test Results For Gender And Drae

	Gender	N	Mean	Std. Deviation	F	Sig	Groups
DTA	Female (1)	103	3,65	,678	1.498	.010*	1-2
	Male (2)	185	3,86	,633			
DMA	Female(1)	103	3,14	,838	.001	.022*	1-2
	Male (2)	185	3,38	,828			

The table shows that there significant differences between gender groups in various subscales like digital tool application and digital media awareness subscale whereby male is better than female in both subscales basing on the mean scores, whereby male has a mean score of 3.86 and female scored 3.65 for the digital tool application and for digital media awareness, the mean scores for male was 3.38 and 3.14 for female, lastly, there was no significant differences for digital application usage, information seeking skills and information sharing behaviour.

Varıance Analysıs Results For Number Of Hours Spent On Internet And Drae

		N	Mean	Std. Deviation	F	Sig	Groups
DTA	Less than an hour (1)	14	3,57	,317	3,505	,016*	2-3
	1-3 hours (2)	79	3,61	,692			2-4
	3-6 hours (3)	95	3,81	,614			
	More than 6 hours (4)	100	3,90	,674			
	Total	288	3,78	,656			
DAU	Less than an hour (1)	14	3,24	1,041	5,353	,001*	1-2
	1-3 hours (2)	79	3,97	,830			1-3
	3-6 hours (3)	95	3,93	,886			1-4
	More than 6 hours(4)	100	4,15	,713			
	Total	288	3,98	,840			
DMA	Less than an hour (1)	14	3,19	,759	2,773	,042*	2-4
	1-3 hours (2)	79	3,10	,914			
	3-6 hours (3)	95	3,28	,806			
	More than 6 hours (4)	100	3,46	,791			
	Total	288	3,29	,838			
ISB	Less than an hour (1)	14	3,73	,737	9,181	,000*	1-4
	1-3 hours(2)	79	3,73	,662			2-3
	3-6 hours (3)	95	4,01	,588			2-4
	More than 6 hours(4)	100	4,20	,588			4-3
	Total	288	3,99	,642			

The table shows that there are significant differences for various subscales basing on the number of hours spent on internet by the students. For instance in digital tool application sub-scale, there are differences between groups who use internet between 1-3 hour and 3-6 hours, 1-3 hours and more than 6 hours groups, for the digital application usage subscale, there are significance differences between groups of less than one hour and 1-3 hours, less than an hour and 2-6 hours, less than an hour and more than 6 hours, for the digital media awareness subscale there are differences between groups 1-3 hours and more than 6 hours, for information sharing subscale, there are differences between the groups; less than one hour and more than 6 hours, 1-3 hours and 3-6 hours, 1-3hours and more than 6 hours, more than 6 hours and 3-6 hours. Basing on their mean scores, it is indicated that the more hours on internet the more the digital readiness for academic engagement (observed by the continuous increment in the mean scores).

Varıance Analysıs Results For Geographıcal Regıon And Drae

		N	Mean	Std. Deviation	F	Sig	Groups
DAU	Africa (1)	90	4,08	,615	3,587	,014*	1-3
	Rest of Asia (2)	40	4,28	,645			2-3
	Middle East (3)	155	3,85	,964			
	Others (4)	3	4,22	1,07			
	Total	288	3,98	,840			
ISS	Africa (1)	90	3,93	,671	3,088	,028*	2-3
	Rest of Asia (2)	40	4,14	,700			
	Middle East (3)	155	3,78	,733			
	Others (4)	3	3,90	,694			
	Total	288	3,88	,717			

The table shows that there are significant differences for various subscales basing on the students' geographical region of origin. For digital application usage subscale there are significant differences between Africa and Middle East, Rest of Asia and Middle East whereby basing on mean scores Middle East region scored lower than other regions. Also significant differences Africa and Middle East for information seeking skills subscale here Africa scored better than Middle East. Indicating a deficiency in Middle East region.

Varıance Analysıs Results For Level Of Study And Drae

		N	Mean	Sd. Deviation		Sig	Groups
DAU	LPS (1)	75	3,64	1,026	5,788	,001*	1-2
	Bachelors (2)	176	4,11	,718			1-3
	Master (3)	33	4,06	,823			
	Doctorate (4)	4	4,17	,638			
	Total	288	3,98	,840			
ISS	LPS (1)	75	3,62	,614	4,832	,003*	1-2
	Bachelors (2)	176	3,98	,709			
	Master (3)	33	3,90	,831			
	Doctorate (4)	4	4,17	,882			
	Total	288	3,88	,717			

The above table shows that there are significance differences basing on the students' level of study; for digital tool application there are differences between language preparatory school and bachelors, language preparatory school and masters as the language preparatory school scored lower than their counter parts. Differences are also observed for information seeking skills subscale between groups language preparatory school and bachelors whereby bachelors scored better than language preparatory school. This might be due the fact that those at the language preparatory school are just from their countries and some has just joined the university hence not yet exposed to various digital technology devices.

Conclusions

The study investigated the level of digital readiness of international students for academic engagement. It involved male and female participants from different geographical regions like Africa, Middle East, Rest of Asia, Europe and America, studying at different faculties, level and year of study.

It was found out that majority of the participants had smartphones and laptops and all had access to internet however the duration of internet use varied but majority of the respondents reported to spend more than 6 hours on internet daily. When comparisons amongst the groups depending on the duration on internet and the levels of digital readiness for academic engagement it was found out that the more the time one spend on internet the higher the degree of digital readiness for academic engagement. The findings revealed that to a reasonable extent international students at Gaziantep University are knowledgeable about digital tool application, to large extent international students of Gaziantep University have the ability to use digital applications in the academic field, well-conversant about Information-Seeking Skills and have the ability to share Information pertaining academics with classmates and the community, however to a small extent the international students at Gaziantep University are aware of the digital media in the academic field.

Recommendations

Basing on the study findings analysed and discussed above the following recommendations were suggested by the researcher;

Elimination of classroom bans of student technology devices' use at high schools, this can help to prepare learners to the digital world and increase the degree of their digital readiness for academic engagement at university level. Even though technological devices can distract students during class, students from humble socioeconomic background and slow learners find these devices useful for their academic improvement. This can be done by the high school administrators and teachers. Legislators can also pass a law to permit use of technology devices in classrooms.

Students at faculty of education and those from Middle East region should be given special attention to perfect their skills and knowledge about the utilisation of ICTs in the academic field. This can be done through organizing special lessons for them.

Political stability must be ensured in the Middle East region to make sure that learners have time to concentrate on their studies than running up and down during wars which affect their level of awareness and skills of using digital devices in classroom environment. It was no wonder that their mean values were low compared to students from other geographical regions.

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