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Original article

Influence of Technology on the Study Habits of Students at RAK Medical and Health Sciences University

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Abstract

This study examined how technology influences the study habits of students at RAK Medical and Health Sciences University. A cross sectional survey was conducted among 306 health sciences students using a self-administered questionnaire about their study habits (preparation for exam, place of study, use of text books / online study, device used, time spent on technology) and use of technology. The results showed that students rely more on technology than text books to study. Further studies can be conducted to investigate how technology can be used to improve their psychomotor and linguistic skills including communication skills which are vital for health care professionals.

Keywords: ***Study habits, technology, university students, influence***

Introduction

A 'habit' is a set routine that is difficult to give up. 'Study habit' means the regular schedule that a student follows to accomplish his academic tasks like attending lectures, preparing notes, studying out of class, revising, and completing his assignments etc. In the 21st Century, internet technology has revolutionized the way students work, communicate, study and perform the other tasks of their lives. The influence of technology has become noticeable as it provides such instant access to the information that retains the interest of the students and becomes a challenge for the teacher. Students bring their laptops and mobiles to the classrooms, where free Wi-Fi is available, which is not always appreciated. As the speed of internet increases, so does the number of tools that utilize this still growing technology (Colley & Maltby, 2008).

With the advent of electronic mail (e-mail), e-books, research databases etc., internet has become a primary medium for students' day-to-day activities. Azikiwe (as cited in Igun & Adogbeji, 2007) defined study habits as the way and manner a student plans his or her private reading outside lecture hours in order to master a particular subject or topic. Study habits help students master their areas of specialization. Al Hilawani and Sartawi (1997) defined study skills as the "skills and habits necessary for getting to know and retrieving information''. However, there cannot be any one schedule that is considered as the best one because students have their own learning habits depending on their convenience and circumstances, but it is directly proportional to his results. If a student is able to score well in his exams, his study habits are generally accepted as good and vice versa. Hence study habits can be defined as the way in which a student organizes his time to achieve his desired grades.

In the age of technology, mobiles, laptops and tablets can be used efficiently and effectively for collecting information from the internet. These gadgets also help the students to record the lecture and study at a more convenient time. Studies have shown that people learn considerably better from a combination of both words and images (which technology enables) than merely from words alone (Mayer, 2005).

Research has indicated a need to change and revise curriculum within health colleges to cope with this revolution in technology (Yamani, 2006), because technology is becoming a highly important source of maintaining currency and gaining

knowledge within the health profession (Rosenberg, 2001). International ICT Literacy Panel (IILP). (2002) stated that increased implementation of technology will increase students' comprehension of content and development of skills in such areas as analytical reasoning, problem solving, information evaluation and creative thinking. Also, it facilitates the ease with which content can be updated, instructions can be personalized, information can be accessed and distributed and content can be standardized according to (Cradler, 2002) and (Rosenberg, 2001). Using technology would support the active learning of students in an educational environment designed to help students achieve meaningful learning- which in turn, could result in positive, cumulatively progressive gains in learning outcomes (Michael, 2001).

The authors of this research were curious to find out the study habits of the present generation of health care students who have the advantage of technology to avail the e-resources and how they organize their time.

Materials and Methods

Conducted among 306 students enrolled in College of Medicine, College of Dentistry, College of Pharmacy and College of Nursing, this study aimed to ascertain the extent of influence that technology has over the respondents' study habits

The independent variables were the respondents' gender, nationality, College of studying, medium of instruction in school and year of study in college. As to gender they were classified into male and female, as to nationality, they were classified into Arabs and Non-Arabs, according to colleges, they were divided into College of Medicine, College of Dentistry, College of Pharmacy and College of Nursing. There were two mediums of instruction- English and Arabic. Lastly, they were categorized according to their year of study.

Study Duration - 6-9 months
Study Design - Cross-sectional Survey
Study Location - RAK Medical and Health Sciences University, Ras al Khaimah.
Study population - Students (males and females), studying medicine, dentistry, pharmacy and nursing courses at RAKMHSU.
Sample Size Calculation - The sample was estimated at a target population of 1225. We assumed a confidence interval of 5% and confidence level of 99%. The first name was selected by Blind Method and then every third name from the list was selected. The sample size needed was 306.
Subjects and Selection Method - After getting the approval from the Research and Ethical Committee of the university, the students were briefed about the study procedure and their consent was taken.
Inclusion: All the students whose names were selected.
Exclusion: The students who were not willing to participate and whose names were not selected.

Procedure and Methodology
The researchers conducted a students' survey to understand the influence of technology on their study habits. A structured questionnaire was prepared, validated and distributed to the students of the four colleges in the presence of the faculty. The data was collected and analyzed with SPSS version 24. The results were compiled based on the scale of Always, Sometimes and Never from the male and female students of different nationalities, mediums of instruction, colleges and years of study.

The questionnaire was divided into 8 sections. Each section had a set of questions according to:

1. Demographic details
2. Time management
3. Study environment
4. Methods of study
5. Preparation of exams
6. Device used for studying
7. Hours/day spent on technology
8. Role of technology in improving the learning experience

Results

Table1: Demographic details of study participants

Items		**N=306**	**%**
Gender	Male	98	32
	Female	208	68
Nationality	Arab	212	69.3
	Non-Arab	94	30.7
College	Medical	113	36.9
	Nursing	58	19
	Dental	91	29.7
	Pharmacy	44	14.4
Medium of Instruction (High School)	Arabic	132	43.1
	English	174	56.9
Year of Study	First	53	17.3
	Second	72	23.5
	Third	47	15.4
	Fourth	97	31.7
	Fifth	37	12.1

Table 1 shows that the total number of respondents was 306, out of which there were 208 (68%) females and 98 (32%) males. 212 participants (69.3%) of the study population were Arabs as compared to 94 (30.7%) of Non- Arabs. Maximum number of participants i.e. 113 (36.9%) were studying in College of Medicine, 91 (29.7%) in Dental College, as compared to 44 (14.4%) of Pharmacy College, and 58 (19%) in the Nursing College. Majority of students, i.e. 174 (56.9%) studied in English Medium schools and maximum number of respondents i.e. 97 (31.7%) were from the 4th year of study.

Table 2: Relation between selected variables and Time Management (N=306)

Items	Medium of Study(High school)						Chi Square	p-value	College												Chi-Square	p-value
	Arabic			English					Medical			Nursing			Dental			Pharmacy				
I prefer to :	N	S	A	N	S	A			N	S	A	N	S	A	N	S	A	N	S	A		
prepare a study schedule in the beginning of semester	29	71	30	54	85	32	3.32	0.189	37	48	23	7	34	17	27	51	13	12	23	9	12.84	0.46
stick to the	38	58	34	53	81	37	0.83	0.6	43	46	19	8	22	28	30	4	16	10	26	8	31.03	0.000

prepared schedule								58								5						
study at night	17	54	59	12	56	103	7.40	0.025	17	40	51	3	20	35	5	36	50	4	14	26	9.16	0.165
study early in the morning	19	71	40	38	85	48	2.78	0.249	25	45	38	20	25	13	7	61	23	5	25	14	25.91	0.000
meet the deadlines of my assigned work on time	10	40	80	3	36	132	11.36	0.003	4	19	85	1	24	33	5	22	64	3	11	30	13.04	0.042
attend my lecture classes regularly	14	23	93	7	42	121	7.09	0.069	9	24	74	8	5	45	4	27	60	0	9	35	18.41	0.031
attend rotation/field visits regularly	20	56	51	3	23	40	100	0.001	14	25	68	11	20	27	14	36	35	4	15	21	22.62	0.007
utilize the free time between classes to study	33	74	23	45	90	35	1.33	0.722	27	51	30	5	45	8	36	40	14	10	28	6	31.40	0.000

N=Never S=Sometimes A= Always

Table 2 depicts that 156 (51.8%) of the study population sometimes prepared a study schedule at the beginning of the semester and only 139 (45%) of them followed the prepared schedule throughout the semester. Approximately half of the study population i.e.162 (52.9%) preferred to study at night as compared to 88 students (28.8%) who preferred to study in the morning. It was noted that 214 (71%) students attended lectures regularly but a slight drop was seen in the field visits/ rotations where only151 (49.3%) students regularly attended the field rotations and 164(53.6%) students sometimes utilized their free time in between classes to study.

Interestingly, 17 (29.3%) students from Nursing College always prepared a schedule at the beginning of the semester as compared to 23 (21.3%) from Medical College 9 (20.5%) from Pharmacy College and only 13 (14.4%) from Dental College which was statistically significant with a p-value of p=0.046.

In comparison with the different colleges at RAK Medical and Health Sciences University less than half 28 (48.3%) of the students from Nursing College always preferred to stick to the schedule as compared to only 19 (17.6%) from Medical College, 16 (17.6%) from Dental College and 8 (18.2%) from Pharmacy College which is statistically significant, p=0.000.

It is interesting to note that 103 (60.2%) students from English medium school preferred to study at night compared to 59 (45.4%) of the Arabic medium. This shows statistical significance with p = 0.08.

Only 38 (35.2%) of students from Medical College always studied early in the morning compared to 25 (23.1%) who never studied early in the morning. 61 (67%) students from Dental College sometimes preferred to study early in the morning.

More than half of the respondents, i.e., 156 (51.8%) sometimes studied in the morning out of which 61 (67%) were from Dental College followed by 25 (56.8%), 25 (43.1%) and 45 (41.7 %) from Pharmacy College, Nursing College & Medical College respectively. About 212, i.e., majority of students (70.4%) always met the deadlines of assigned work. Out of these, 85 (78.7%) were students of Medical College, 64 (70.3%), and 30 (68.2%) from Dental College and Pharmacy College respectively. The lowest was noted in Nursing College with 33 (56.9%) students amongst whom132 (77.2%) were from English medium school compared to 80 (61.5%) from Arabic medium with a p-value of 0.003 showing a statistical significance.

A total of 214 (71.1%) students always attended lectures regularly out of which 35 (79.5%) were from Pharmacy College 45 (77.6%) from Nursing College, 74 (68.5%) and 60 (65.9%) from Medical College and Dental College respectively which shows a statistical significance (p= 0.031)

Field rotations were mostly attended by 100 (58.5 %) students who studied in an English medium school as compared to 51 (39.2%) students from Arabic medium.

Table 3: Relation between selected variables (medium of school study and college) and study environment of the participants (N=306)

Items	Medium of Study(High school)						Chi Square	p-value	College												Chi-Square	p-value
	Arabic			English					Medical			Nursing			Dental			Pharmacy				
I prefer to :	N	S	A	N	S	A			N	S	A	N	S	A	N	S	A	N	S	A		
listen to the lectures attentively	4	71	55	0	90	81	5.735	0.057	0	58	50	0	37	21	4	46	41	0	20	24	12.979	0.043
have a designated area that is free of noise and distraction	17	55	58	12	59	100	6.707	0.035	11	42	55	12	14	32	3	43	45	3	15	26	17.401	0.008
study in the library	29	75	26	34	98	39	0.479	0.787	19	58	31	7	35	16	30	51	10	7	29	8	18.976	0.004
coffee shops	91	24	15	139	13	19	8.328	0.016	99	4	5	30	13	15	71	9	11	30	11	3	41.833	0

N=Never S= sometimes A=Always

Study Environment

The data shows that only 136 (44.4%) students attentively listened to the lectures out of which, 24 (54.5%) students were from Pharmacy College as compared to 21 (36.2 %) from Nursing College with a p-value of 0.043 showing statistical significance.

Out of the 306 respondents, 26 (59.1%) students from Pharmacy College followed by 32 (55.2%), 55 (50.9%) and 45 (49.5%) from Nursing College, Medical College and Dental College respectively, preferred to study in a designated area free of noise which shows statistical significance as the p<0.05. 100 (58.5%) students were from English medium school as compared to 58 (44.6%) students from Arabic medium. This shows statistical significance with a p-value of 0.035.

Out of 306, 174 (56.9%) students preferred to study alone and they studied in the library as compared to 176 (57.5%) students who preferred to study in groups. Only 31 (28.7%) students from medical college as compared to 10 (11%) students from dental college, always utilized the Library to study. The p-value of 0.004 shows statistical significance as.

A majority of the students i.e., 230 (76.4%) never utilized other places to study other than their home or library.

Table 4: Relation between selected variables and methods of studying (N=306)

Items	Medium of Study(High school)						Chi Square	p-value	College												Chi-Square	p-value
	Arabic			English					Medical			Nursing			Dental			Pharmacy				
I prefer to :	N	S	A	N	S	A			N	S	A	N	S	A	N	S	A	N	S	A		
my personal copy of textbook	34	50	46	22	64	85	10.512	0.005	12	30	66	5	33	20	26	34	31	13	17	14	34.539	0
Library copy	32	71	27	29	101	41	2.728	0.256	21	57	30	5	44	9	29	42	20	6	29	9	20.022	0.003
e-book	35	49	42	48	68	44	2.904	0.407	35	36	37	15	27	16	19	30	27	14	24	6	47.404	0
Lectures/Ppt.	4	18	101	1	26	134	2.887	0.409	0	22	85	0	14	43	5	2	70	0	6	37	49.559	0
Journals	43	62	18	69	60	28	5.085	0.166	46	43	16	16	27	14	30	37	12	20	15	4	20.135	0.17
Teachers notes	7	33	90	6	47	116	2.266	0.519	7	20	81	2	24	32	4	26	59	0	10	34	18.435	0.03
Revision classes	10	53	67	10	51	110	4.993	0.082	8	29	71	6	31	21	4	29	58	2	15	27	16.66	0.011

N=Never S=Sometimes A=Always

Methods of Studying

In this study only 131 (42.8%) of students used their personal textbook for studying, out of which 85 (48.8 %) were from English medium school who always had personal textbook copies and 46 (34.8%) students were from Arabic medium school showing a statistical significance (p=0.005). 66 (61.11%) of students from Medical College had a personal copy of textbook as compared to 20 (35%) from Nursing College, 31 (34.1%) from Dental College and 14(31.8%) from Pharmacy College, with a p-value of 0.000.

Out of the total 306 students, 172 (57.1 %) of students sometimes preferred to use library copy of textbooks of which 44 (75.9%) were from Nursing College. 29 (65.9%) from Pharmacy College, 57 (52.8%) from Medical College and 42 (46.2%) from Dental College (p=0.000)

It was noted that 235 (78.1%) of students were dependent on and studied from the lecture, 47.7% and 39.9% only used online resources and journals respectively. However most of the students were dependent on teacher's notes.

Surprisingly only 46 (15.3%) students preferred to use journals of which 16 (14.8%) students were from Medical College, 14 (24.1%) from Nursing College, 12 (13.2%) from Dental College and 4(11.4%) from Pharmacy College. However, it is interesting to note that amongst the 112 (37.2 %) students who never used a journal, the highest percentage was seen in Pharmacy College with 20 (45.5%) followed by 46 (42.6%) from Medical College p=0.17.

34 (77.3%) students from Pharmacy College as compared to 32 (55.2%) from Nursing College preferred teachers notes. This is directly proportional to the finding where 84.1 % of students from Pharmacy College always preferred to use lectures/ PowerPoint to study.

71 (65.7%) students from Medical College, always preferred revision classes as opposed to 21(36.2%) students from Nursing College P = 0.11 (p-value <0.05) .

Learning methods that helped the students to understand the subject better

There was no major statistical significance noted in relation between gender, nationality, medium of school and college.

Table 5: Relation between selected variables and preparation for exams (N=306)

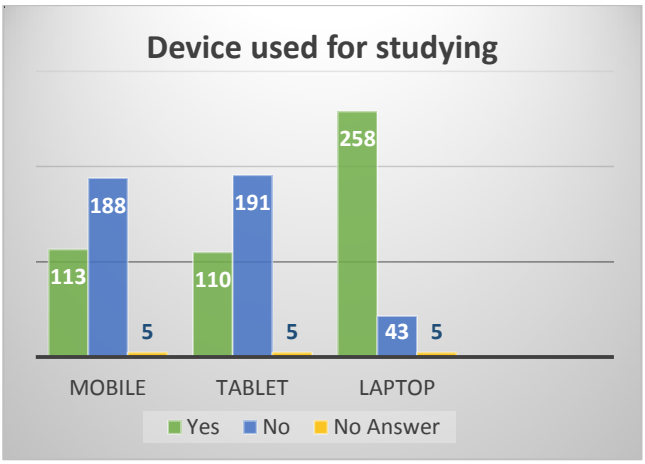
Items	Medium of Study(High school)						Chi Square	p-value	College												Chi-Square	p-value
	Arabic			English					Medical			Nursing			Dental			Pharmacy				
I prefer to :	N	S	A	N	S	A			N	S	A	N	S	A	N	S	A	N	S	A		
start my preparation much in	17	66	47	21	93	57	0.39	0.823	14	56	38	2	38	18	16	50	25	6	15	23	16.014	0.014

advance																						
start my preparation on a day before the exam	32	40	58	55	68	48	8.863	0.012	40	44	24	12	14	32	25	32	34	10	18	16	19.607	0.003
study only selected important topics for the exam	29	59	42	49	76	46	1.901	0.386	27	57	24	9	25	24	25	34	32	17	19	8	15.681	0.016
study all the topics included for the exam	12	28	90	12	51	108	2.8	0.247	9	36	63	9	17	32	2	25	64	4	1	39	25.678	0

N=Never S=Sometimes A=Always

Out of the total 306 participants, only 104 (34.6%) of students always prepared for the exam much in advance but 159 (52.8%) sometimes started preparation for the exam much in advance. Of all the colleges 23 (52.3%) of students from Pharmacy College always prepared much in advance as compared to 25 (27.5%) from Dental College, p= 0.14 . It was noted that 32 i.e. more than 50% of students from Nursing College started preparation a day before the exam as compared to 24 (22.2 %) of students from Medical College =0.003.

57 (52.8%) of students from Medical College sometimes studied only selected important topics for the exam as compared to 25 (41.4 %) of students from Nursing College who always studied selected topics for the exam p=0.016.



Device used for studying

A majority of 258 (84.3%) students utilized laptop for studying as compared to mobile and tablet. It was surprising to note that most of the students did not prefer to use their mobile for studying and it was not statistically significant. It was noted that 262 (85.7%) students preferred to utilize the laptop for studying for the exam. College wise it was noted that (90.1%) from Medical College, 89.8% from Dental College and 86.2% Nursing College preferred to study from the laptop for the exam. Only 65.9% students from Pharmacy College preferred laptop probably because they preferred to study from lecture notes as noted previously. 48.3 %, 38.9%, 34.1% and 20.5% students from Nursing College, Medical College, Dental College and Pharmacy College respectively preferred to use the tablet for studying for the exam. The results were statistically significant with p = 0.31.

Number of hours / days spent on technology

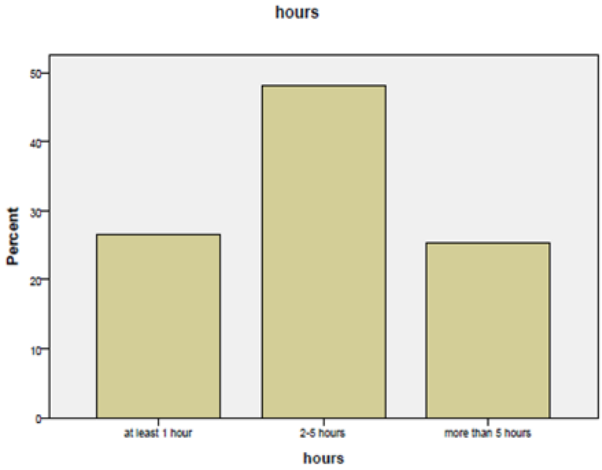


Figure 2: Number of hours spent on technology to facilitate learning

As shown in the graph, about 77 (25%) students spend more than 5 hours in a day, 145 (47.4%) students spend 2-5 hours on technology every day and only a meagre 80 (26%) students use technology for less than an hour.

Role of technology in improving learning experience

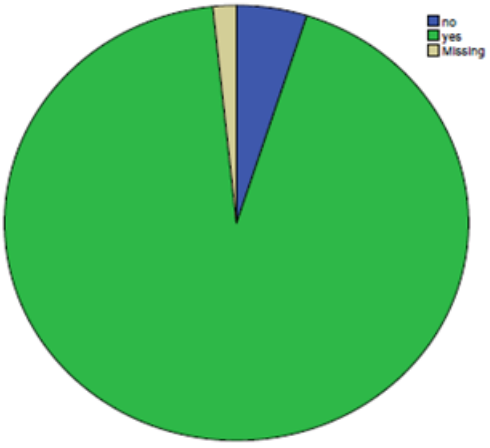


Figure 3: Does technology improve your learning experience

A whopping number of 291 (95%) students in the study expressed that technology improved their learning experience.

Discussion

This research has proved that study habits of students and technology are strongly related. Michael, (2001) supports the idea that it is important to use technology and it should be incorporated in the daily activities of clinical and basic sciences. Morgan Noble (2015) is of the opinion that the focus of students in the classroom may have decreased slightly, but the amount of information at their fingertips has also helped their learning. It has provided access to some study tools they otherwise would not have had. It was noted that more than 50% of the students prepared a schedule and most of them tried to follow it. More than half of the study population preferred to study at night. A noticeable range of 70.4% students met the deadlines of the assigned work which is a very encouraging attitude. It is interesting to see that this statistics matches with the study conducted by Michael, (2014) where it was stated that 68.31% respondents always met the deadlines of the assigned work. As far as studying in groups and studying alone is concerned, an approximately equal number of students preferred to study in groups (57.5%) and alone (56.9%) which opposes the study conducted by Andrea, et. al., (2015) where more than 54.1% students preferred to study alone but a slightly lesser percentage (50.4%) studied in groups. Moreover, this research found that only 42.8% of the students used their personal textbooks in the university while 78.1% used the lectures/power points. This is also opposed to a study by Andrea, et. al., (2015) done in an Italian university where majority of the students used their text-books. Similar to a research conducted by Mohammed, (2017) where almost 86% participants utilized the laptop for studying, 85.7% students of this university preferred to use their laptops instead of mobiles.

Conclusion

The study investigated the study habits of students studying in a medical and health sciences university in the UAE, and concluded that technology has played an important role in influencing the study habits of students. Students rely on technology for their studies instead of text books. Further studies can be conducted to investigate how technology can be used to improve their psychomotor and linguistic skills including communication skills which are vital for health care professionals

Conflict of interest

None

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