Internet i koliko se njime koriste studenti Stomatološkog fakulteta u Zagrebu

Bašić, Krešimir; Vazdar, Melita; Vodanović, Marin; Brkić, Hrvoje

Source / Izvornik: **Acta stomatologica Croatica, 2007, 41, 142 - 151**

Journal article, Published version
Rad u časopisu, Objavljena verzija rada (izdavačev PDF)

Permanent link / Trajna poveznica: https://urn.nsk.hr/urn:nbn:hr:127:048518

Rights / Prava: Attribution-NonCommercial-NoDerivatives 4.0 International/Imenovanje-Nekomercijalno-Bez prerada 4.0 međunarodna

Download date / Datum preuzimanja: **2024-07-28**

Repository / Repozitorij:

University of Zagreb School of Dental Medicine Repository

ACTA
STOMATOLOGICA
CROATICA
www.ascro.net

Acta Stomatol Croat. 2007;41(2):142-51.

IZVORNI ZNANSTVENI RAD
ORIGINAL SCIENTIFIC PAPER

Krešimir Bašić[1], Melita Vazdar[1], Marin Vodanović[2], Hrvoje Brkić[2]

Internet i koliko se njime koriste studenti Stomatološkog fakulteta u Zagrebu

Internet and Information Technology Use by Students in School of Dental Medicine University of Zagreb

[1] Student, Stomatološki fakultet Sveučilišta u Zagrebu
Student, University of Zagreb, School of Dental Medicine
[2] Zavod za dentalnu antropologiju Stomatološkog fakulteta Sveučilišta u Zagrebu
University of Zagreb, School of Dental Medicine, Department of Dental Anthropology

Sažetak
Ovim se istraživanjem željela ustanoviti razina informatičke pismenosti studenata dodiplomske nastave Stomatološkog fakulteta Sveučilišta u Zagrebu (SFSZG-a) te doznati više zašto se i koliko koriste računalima i internetom. Bilo je obuhvaćeno 297 studenata svih pet godina dodiplomske nastave - 29,3% muških i 70,7% ženskih ispitanika, a srednja im je dob bila 21 godina. Svi su ispunili upitnik s 15 pitanja, a rezultati su obrađeni Spermanovim testom korelacije i testom hi kvadrat. Statistički je praćena korelacija varijable "poznavanje pojma elektroničkog učenja (e-learning) i ostalih zadanih varijabli. Rezultati su pokazali da se studenti koriste računalom dva sata na dan (77%) i to uglavnom – kako navodi njih 79,8% - za "surfanje internetom". Glavni razlog za pregled internetskih stranica studentima je "pronalaženje informacija" u 52,8% slučajeva te "komunikacija i pregledavanje e-pošte", što je istaknulo njih 21%. Računalom se ne koristi 5,2% studenata SFSZG-a.

Zaprimljen: 3. svibnja 2007.
Prihvaćen: 20. svibnja 2007.

Adresa za dopisivanje
Marin Vodanović
Sveučilište u Zagrebu
Stomatološki fakultet
Zavod za dentalnu antropologiju
Gundulićeva 5, 10 000 Zagreb
vodanovic@sfzg.hr

Ključne riječi
računala; studenti stomatologije; učenje na daljinu

Uvod

Iako je prva uporaba računala kao nastavnog pomagala zabilježena još pedesetih godina 20. stoljeća (1), u izobrazbu studenata stomatologije uključeno je tek 1971. kada ga je Stomatološki fakultet Sveučilišta u Kentuckyju u SAD-u eksperimentalno uvrstio kao nastavno pomagalo u curriculum studija (2). Na početku je primjena računala u nastavi bila razmjerno rijetka i složena, jer su se tadašnji uređaji znatno razlikovali od današnjih - kako izgledom i veličinom, tako i funkcionalnošću. Pravi procvat uporabe računala u nastavi dogodio se osamdesetih godina 20. stoljeća, kada je IBM dao na tržište pr-

Introduction

Using computers as teaching aids began in the 1950's (1), however, computers were implemented in dental education as late as 1971 when the University of Kentucky Dental Science Study Centre in the USA began to experiment with computers as teaching aids within the dentistry course curriculum (2). At first, computer implementation was infrequent and complicated, since the computers of the day were significantly different from today's in appearance and size, as well as in their functionality. The real growth of computer use in teaching took place in the 1980's when IBM launched the first desktop computer. Desktop comput-

va stolna računala. Ona su vrlo brzo prihvaćena kao izvrstan medij za vizualizaciju pojedinih nastavnih sadržaja, za provjeru znanja studenata te za učenje (computer assisted learning – CAL).

Sve češćom uporabom interneta, uloga računala u izobrazbi dobila je još više na značenju. Učenje uz pomoć interneta danas je postalo gotovo svakodnevno i prijeko potrebno - kako za nastavnike, tako i za studente, a podaci iz literature pokazuju da se koristeći se CAL-om postižu bolji rezultati negoli kod učenja na tradicionalan način (3-7). To se osobito odnosi na studente stomatologije i medicine, jer se ta dva područja prirodnih znanosti razvijaju znatno brže od ostalih. Trenutačni napredak komunikacijskih tehnologija zahvaljujući internetu poboljšava mogućnosti komunikacije među kolegama, komunikaciju između stomatologa i pacijenata, omogućuje i pohranjivanje i distribuciju stomatoloških informacija, olakšava praćenje znanstvenih i stručnih novosti u svijetu, otvara nove marketinške mogućnosti u stomatologiji, a osim toga daje i novu dimenziju učenju, posebice u visokom obrazovanju (8-10). Prema podacima iz dostupne literature, CAL se koristi u nastavnim programima stomatološke protetike, dentalne anatomije, ortodoncije i paradontologije (11-14).

Dodiplomska izobrazba studenata Stomatološkog fakulteta Sveučilišta u Zagrebu (SFSZG) ima dugu tradiciju - još iz doba bivše Jugoslavije (15). SFSZG je u svojoj pedesetogodišnjoj tradiciji doživio niz promjena vezanih za dodiplomsku i poslijediplomsku izobrazbu doktora stomatologije. Vrjednovanje kvalitete nastave na SFSZG-u u sklopu projekta "DentED" Europske udruge za izobrazbu u stomatologiji, te ECTS bodovni sustav prema Bolonjskoj deklaraciji, samo su neki od primjera posljednjih usklađivanja stomatološke edukacije na SFSZG-u prema standardima Europske Unije (16-19).

Uporaba računala u nastavne svrhe na SFSZG-u je u načelu, s većim ili manjim odmacima, pratila trendove u svijetu. Iako su se na početku računala koristila isključivo kao izolirano pomagalo u nastavi pojedinih kolegija, pravi zamah se dogodio nakon umrežavanja fakultetskih računala, jer je zainteresiranima bio omogućen pristup internetu i uspostavljena je fakultetska mrežna stranica. Od tog trenutka nastavnu primjenu računala na SFSZG-u možemo podijeliti u tri faze. U prvoj su studentima na mrežnim stranicama fakulteta bile ponuđene servisne informacije o rasporedu vježbi i predavanja, sadržaju i programu pojedinih kolegija, uvjeters were quickly accepted as an excellent means to visualize certain teaching content, for knowledge quizzes, and for computer-assisted learning (CAL).

The role of the computer in education became more important with the widespread use of the Internet. Learning over the internet has become almost inevitable, both for teachers and for students, and much data collected from the literature indicates that students using CAL achieve better results than those whose learning is based on the traditional manner of learning (3-7). The current progress in communication technology through the internet improves the possibilities of communication among colleagues, allows for additional dialogue between the dentist and the patients, enables dental data storage and distribution. It facilitates news monitoring in science and within the profession, opens new marketing possibilities in dentistry, and aside from all of this, creates a new dimension in learning, especially at institutions of higher learning (8-10). According to data from the available literature, CAL has been used in course work for prosthodontics, dental anatomy, orthodontics and periodontology (11-14).

Undergraduate education at the University of Zagreb School of Dental Medicine (UZSDM) has a long tradition reaching back to the times of former Yugoslavia (15). During its fifty year existence the UZSDM has undergone a series of changes involving both dental undergraduate and postgraduate studies. Education quality evaluation at the UZSDM within the "DentEd" European organization for dental education, and the introduction of the European Credit Transfer system - ECTS according to the Bologna declaration are only two examples of dental education harmonization conducted at the UZSDM according to EU standards (16-19).

Computer use for assisted teaching at the UZSDM has mainly followed global trends, with exceptions during times of national conflict. Even though computers were initially used only as an isolated teaching aid for certain courses, it picked up veritable momentum through computer networking which made internet access possible, and made way for the Dental School's webpage. From that moment, computer implementation in teaching at the UZSDM can be divided into three phases. In the first phase students were provided with service information via the website, and this pertained to clinical and classroom course schedules, content and program information concerning courses, higher year enrollment conditions, teachers' consult times, etc. During the second phase the web pages become the source and means for course material distri-

tima upisa u višu godinu studija, konzultacijama s nastavnicima i dr. U drugoj fazi te su stranice postale izvor i način distribucije nastavnih sadržaja, kao što su različite prezentacije, multimedijalni prikazi pretkliničkih i kliničkih vježbi, nastavni tekstovi, itd. (20). Za razliku od tih dviju faza utemeljenih na neobvezujućoj i jednosmjernoj komunikaciji sa studentima, u trećoj su mrežne stranice fakulteta postale interaktivan izvor koji omogućuje, ali i zahtijeva, dvosmjernu komunikaciju između studenata i osoblja (nastavnika) fakulteta. Naime, mnogobrojni nastavni postupci koji su do sada zahtijevali istodobnu fizičku interakciju nastavnika i studenta na istom mjestu, prelaze u elektronički oblik. Tako se u toj trećoj fazi, kolokviji i ispiti prijavljuju i odjavljuju preko mrežne stranice fakulteta - te stranice postaju mjesto pristupa online ispitima iz pojedinih kolegija, preko njih student pristupa interaktivnim nastavnim sadržajima i online-tečajevima. Potrebno je istaknuti da je prelazak iz niže u višu fazu bio postupan i neravnomjeran između zavoda i katedra fakulteta, odnosno kolegija.

S obzirom na to će informatizacija nastavnog procesa na temelju interaktivnosti uskoro postati nužnost - a za njezinu će uspješnu i učinkovitu primjenu biti prijeko potrebna informatička pismenost korisnika kojima je namijenjena - ovim istraživanjem željela se doznati razina informatičke pismenosti studenata dodiplomske nastave SFSZG-a te dobiti više podataka o razlozima zbog kojih se koriste računalima i internetom.

Ispitanici i postupci

Ovo istraživanje je slučajnim odabirom obuhvatilo 297 studenata svih 5 godina dodiplomske nastave SFSZG-a. Studenti su bili oba spola u omjeru 29,3% muških i 70,7% ženskih ispitanika, a srednja im je dob bila 21 godina, (Tablica 1., Slika 1.).

Svi su anonimno popunili anketni listić s 15 pitanja (Tablica 2.).

Statistika

Varijable korištene u istraživanju podijelili smo u dvije skupine - ordinalnu i nominalnu. Posebno smo pratili korelaciju prema Spearmanu između ordinalne varijable "poznavanje pojma e-učenja" i svih ostalih ordinalnih varijabli (Tablica 3.). U obzir smo uzeli korelacije s koeficijentom većim od 0,15 (slaba povezanost između varijabli). Zatim smo analizirali korelaciju prema Spearmanu između varijabli čiji koeficijent korelacije prelazi 0,2 (znatna povebution, the content ranging from various presentations, multimedia demonstrations of pre-clinic and clinical course work, course-related texts, etc (20). The third phase differs from the first two, which were based on non-engaging and unilateral communication with the student, whereas in the third phase the School's web pages become an interactive source which permits and commands bilateral communication between the students and the staff (teachers). Many teaching procedures requiring the contemporaneous physical interaction between teachers and students within the same physical space have been transferred into electronic form. During this phase students register for and/or cancel colloquial exams and final exams through the website; the web pages become access sites for final exams for certain courses; students access interactive course work and online courses through them. It is important to emphasize that the transition from basic to more advanced phases is gradual, and this is an uneven transition between all of the Dental School's departments, divisions and their courses.

Since the informatization of the teaching process based on interactivity represents an unavoidable element of the near future, the successful and efficient application of which will be determined by its users' computer literacy,This research aimed to gain insight into the level of computer literacy of the undergraduate student body at the UZSDM, and to discover more about their reasons for using computers and the Internet.

Subjects and methods

This research involved 297 randomly selected students from all 5 years of the undergraduate program at the UZSDM. The students were members of both sexes distributed as follows: 29.3% male and 70.7% female subjects whose mean age was 21 years, Table 1, Figure 1.

Each student filled out anonymously a questionnaire consisting of 15 questions (Table 2).

Statistical Analysis

The variables utilized in this study were divided into the following two groups: ordinal and nominal. For the purposes of the study the Spearman's correlation was used to determine the relationship between the ordinal variable: "recognizing the term "e-learning" "and all of the other ordinal variables, Table 3. We found that Spearman's rank-order correlation coefficient was larger than 0.15 (weak link between the variables). Furthermore, we observed

Tablica 1. Studenti SFZG-a razvrstani prema godini studija, spolu i dobi
Table 1 The tested student body of the UZSDM according to year of study, sex and age

godina faksa • Year of study	broj ispitanika • Number of subjects		spol • Sex		Godine starosti • Age
			ženski • female	muški • male	
1. godina • 1st year	84	28,3%	56	28	19
2. godina • 2nd year	49	16,5%	33	16	20
3.godina • 3rd year	69	23,2%	44	25	21
4.godina • 4th year	50	16,8%	39	11	23
5.godina • 5th year	45	15,2%	38	7	23
Ukupno • Total	297	100%	210	87	Srednja 21 • Average 21

Tablica 2. Upitnik koji su ispunjavali studenti
Table 2 Questionaire handed of to students

1. Kojeg ste spola? • Gender?
   a) muško • Male
   b) žensko • Female
2. Koliko imate godina? • Age?
   a) 18
   b) 19
   c) 20
   d) 21
   e) 22
   f) 23
   g) 24
3. Znate li koristiti računalo? • Can you use computer?
   a) da • yes
   b) ne • no
4. Koristite li računalo? • Do you use computer?
   a) da • yes
   b) ne • no
5. Koliko se dugo služite računalom? • How long do you use computer?
   a) 0 – 5 godina • 0 – 5 years
   b) 5 – 10 godina • 5 – 10 years
   c) 10 – 15 godina • 10 – 15 years
   d) ne koristim računalo • I do not use computer
6. Koliko sati dnevno radite na računalu? • How long do you use computer daily (hours)?
   a) 0 – 1
   b) 1 – 2
   c) 2 – 3
   d) više od 3 sata dnevno • more than 3 hours
   e) ne radim na računalu • I do not use computer
7. Za što najčešće koristite računalo? • For what do you use computer?
   a) za pisanje i izradu različitih vrsta dokumenata • preparing different kinds of documents
   b) za surfanje internetom • Internet
   c) za igranje računalnih igara • computer games
   d) ne koristim računalo • I do not use computer
8. Koliko sati dnevno provedete na internetu? • How many hours do you spend on the Internet per day?
   a) 0 – 1
   b) 1 – 2
   c) 2 – 3
   d) više od 3 sata dnevno • more than3 hours
   e) ne koristim internet • I do not use Internet
9. U koju svrhu najčešće koristite internet? • For what do you use Internet?
   a) slobodno vrijeme, zabava, razonoda, mrežne računalne igre • free time, entertainment, online computer games
   b) za komunikaciju i pregledavanje elektronske pošte • communication and e-mail
   c) za pronalaženje različitih vrsta informacija • finding information on the Internet
   d) za učenje • learning
   e) ostalo • others
   f) ne koristim internet • I do not use Internet
10. Kakvog su sadržaja internet stranice koje najčešće posjećujete? • Describe the contents of the web pages which you visit.
    a) zabavnog • entertainment
    b) znanstvenog • science
    c) sportskog • sports
    d) edukativnog • education
    e) kulturnog • culture
    f) zdravstvenog • health
    g) ostalo • others
    h) ne koristim internet • I do not use Internet
11. Smatrate li računalo nastavnim pomagalom? • Are computers teaching aids?
a) da • yes
    b) ne • no
    c) ne znam • I do not know
12. Koristite li elektroničku poštu kao način komuniciranja? • Do you use e-mail?
    a) da • yes
    b) ne • no
13. Imate li svoju vlastitu e-mail adresu? • Do you have your own e-mail address?
    a) da • yes
    b) ne • no
14. Jeste li se susreli s pojmom "e-learning"? • Have you heard for the phrase "e-learning"?
    a) da • yes
    b) ne • no
15. Edukativne i nastavne sadržaje vezane uz studij, a dostupne na računalu i internetu biste koristili: • How often would you use online teaching materials?
    a) veoma često • very often
    b) često • often
    c) povremeno • sometimes
    d) rijetko • rare
    e) nikada • never
    f) ne znam • I do not know

zanost između varijabli) i varijable s koeficijentom korelacije većim od 0,5 (izvrsna povezanost).

Nominalne varijable usporedili smo χ^2-testom s ordinalnom varijablom "poznavanje pojma e-učenja, a u obzir smo uzeli sve sa znatnošću $p<0,05$ ($p=0,044$) - Tablica 4.

Za statističku obradu podataka koristili smo se računalnim programom SPSS for Windows ver 10.0.

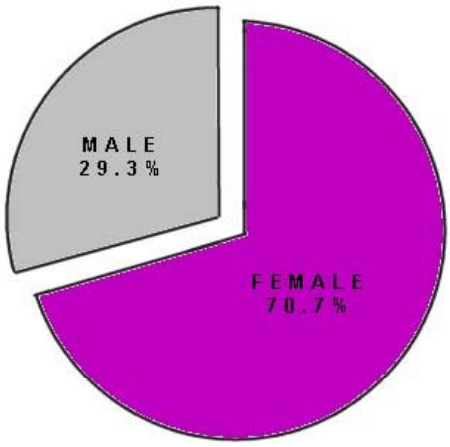
Spearman's correlation between the variables whose coefficients were above 0.2 (considerable link between variables), and variables whose correlation coefficient was larger than 0.5 (excellent link between variables).

Using the χ^2-test the nominal variables were compared with the ordinal variable "recognizing the term "e-learning" ", and we considered all values with a significance of $p<0.05$ ($p=0.044$), Table 4.

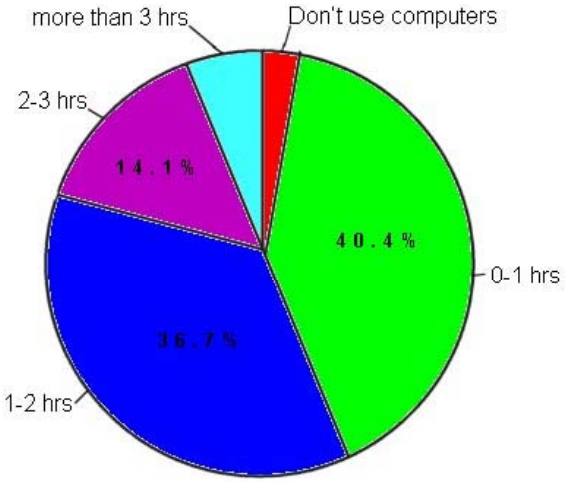
The program used for data processing was SPSS for Windows version 10.0.

Tablica 3. Korelacija između obaviještenosti o pojmu e-učenja i ostalih statistički važnih varijabli
Table 3 Correlation between familiarity with the term "e-learning" and other statistically significant variables

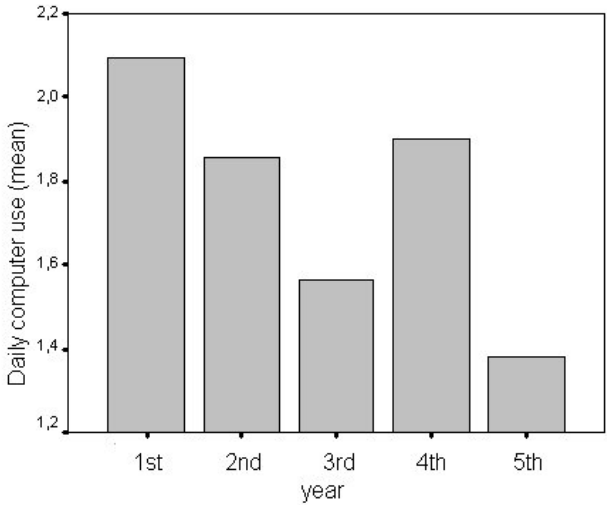
Korelacije - Spearman's rho • Spearman's correlations		upoznati s pojmom e - learning • Familiar with the term e - learning
koliko dugo se koristite računalom • How long have you been using computers	r	,166
	Sig. (2-tailed)	,004
	N	297
dnevno korištenje računala • Daily computer use	r	,151
	Sig. (2-tailed)	,009
	N	297
e-pošta kao način komunikacije • e-mail as a means of communication	r	,240
	Sig. (2-tailed)	,000
	N	297
posjedovanje vlastite e-adrese • Having one's own e-mail address	r	,173
	Sig. (2-tailed)	,003
	N	297



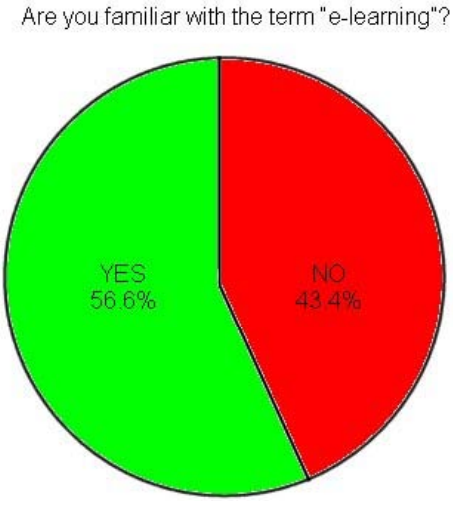
Slika 1. Raspodjela studenata SFZG-a prema spolu
Figure 1 Distribution of UZSDM students according to gender



Slika 2. Grafički prikaz dnevnog korištenja računala
Figure 2 Graphic representation of daily computer use



Slika 3. Grafički prikaz dnevnog korištenja računala prema godini studija
Figure 3 Column chart demonstrating computer use according to year of study



Slika 4. Koliko studenti SFZG-a znaju o pojmu "e-učenja"
Figure 4 Familiarity with the term "e-learning" among UZSDM students involved in the study.

Tablica 4. Povezanost obaviještenosti o pojmu e-učenja i svrhe korištenja računala
Table 4 Correlation between familiarity with the term e-learning and the cited purpose for computer use

χ^2-test		svrha korištenja interneta • Purpose of internet use						Ukupno • Total
		učenje • learning	pronalaženje informacija • Searching for data	komunikacija i pregledavanje e -pošte • Communication and email management	razonoda • Entertainment	ostalo • other	ne koristi internet • Don't use the internet	
upoznati s pojmom e - učenja • Familiar with the term e-learning	ne • No	5	72	19	27	2	4	129
	da • yes	7	84	47	22	6	2	168
Ukupno • Total		12	156	66	49	8	6	297

Tablica 5. Korelacija između godine studija i dnevnog korištenja računala
Table 5 Correlation between year of study and daily computer usage

Korelacije - Spearman's rho • Spearman's Correlations	Corellation Coefficient	Sig. (2-tailed)	N
Godina studija x dnevno korištenje računala • Year of study x daily computer use	-0,244	<0,001	297
Godina studija x vrijeme na internetu • Year of study x time spent on the internet	-0,231	<0,001	297
Dnevno korištenje računala x vrijeme na internetu • Daily computer use x time spent on the internet	0,745	<0,001	297
E-pošta kao način komunikacije x posjedovanje vlastite e- adrese • E-mail as means of communication x having one's own e-mail address	0,593	<0,001	297

Rezultati

Istraživanje je pokazalo da se studenti koriste računalom uglavnom do dva sata na dan (77,1%) - Slika 2. Kao razlog su u 79,8% slučajeva naveli "surfanje internetom". Da je to tako, pokazuje i korelacija varijabli "dnevno korištenje računala" i "vrijeme provedeno na internetu" (r=0,745) - Tablica 5., a pokazuje nam da je vrijeme koje studenti provode za računalom doista vrijeme koje provode na internetu. Kao glavni razlog za korištenje interneta studenti su naveli "pronalazak informacija" u 52,8% slučajeva te "komunikaciju i pregledavanje e-pošte" u 22,1%. Od internetskih stranica studenti najčešće posjećuju one zabavnog (41,6%) i edukativnog (30,0%) sadržaja. Zanimljivo je da je samo 5,2% ispitanika navelo da se ne koristi računalom.

Rezultati istraživanja pokazuju kako se studenti na nižim godinama studija više služe računalom. To se vidi i iz korelacije između varijabli "godina studija" i "dnevno korištenje računala" te "vrijeme provedeno na internetu" prikazane u Tablici 5. (r=-0,244 i r=-0,231). Stupičasti prikaz dnevnog korištenja računala prema godinama studija prikazan je na Slici 3., osim četvrte godine studija, na kojemu

Results

This study shows that students mostly use computers for up to 2 hours daily (77.1%), Figure 2. As their purpose for using computers, 79.8% of students involved cited "surfing the net". Proof towards these statements was given in the correlation between the variables of daily computer use and time spent on the internet (r=0.745), Table 5, which indicates that the time spent at the computer truly is time spent on the internet. As their main purpose for using the internet students cite "searching for data" in 52.8% of the cases, and "communication and e-mail management" in 22.1%. The content of the internet pages viewed by students is entertainment (41.6%) and educational (30.0%) in character. It is of note that only 5.2% of those involved in the study stated that they didn't use computers.

The results of this study show that students from the first few years of study use computers more. This is demonstrated in the correlation between the variables "year of study" and "daily computer use", and "time spent on the internet" shown in Table 5 (r=-0.244 and r=-0.231). The column chart in Figure 3 demonstrates daily computer use according to year of study, with the exception of the 4th year

se vidi da vrijeme koje studenti provode za računalom pada kako idemo prema višim godinama studija.

Iako je ovo istraživanje pokazalo da se studenti koriste računalom u svakodnevnoj praksi, a internetom u različite svrhe - između ostaloga i u edukativne - na pitanje jesu li čuli za pojam e-učenja (e-learning) pozitivno je odgovorilo tek 56,6% ispitanih - Slika 4. Postoji znatna povezanost između korištenja e-pošte kao načina komunikacije i poznavanja pojma e-učenja. Naime, studenti koji znaju za pojam e-učenja koriste se e-poštom kao načinom komunikacije češće negoli studenti koji nisu obaviješteni o pojmu e-učenja (r=0,240) - Tablica 3. χ^2-test pokazuje da studenti koji znaju za pojam e-učenja češće navode da se internetom koriste za komunikaciju i pregledavanje e-pošte od studenata koji nisu čuli za taj pojam (p=0,044) - Tablica 4.

Statistički su važni i povezanost duljine korištenja računala te dnevno korištenje računala s poznavanjem pojma e-učenja - studenti koji su čuli za pojam e-učenja duže se koriste računalom i više vremena svaki dan provode za tim uređajem od studenata koji ne znaju za e-učenje.

Rasprava

Procjena informatičke pismenosti bilo kojeg dijela populacije predstavlja složen zadatak, pa za uspješnu provedbu treba pozorno osmisliti način ispitivanja i odabrati ciljane metode i pitanja za koja znamo da su odgovarajuća za populaciju koju ispitujemo. Naime, današnja je definicija informatičke pismenosti dosta široka i u nju su uvrštene različite vještine - od uporabe mobitela (posebice suvremenijih), preko igranja igara na računalima i konzolama, pa do uporabe računala u edukativne i poslovne svrhe. Za svaku osobu koja je svladala barem jednu od spomenutih vještina, ne bismo smjeli reći da je informatički nepismena. Nažalost, danas zbog visoke specijaliziranosti radnih zadataka postoje vrhunski stručnjaci u uporabi pojedinih računalnih aplikacija, no često su potpuni neznalice kad je riječ o primjeni najobičnijih programa, ako nisu u skupini onih kojima se svakodnevno koriste. Upitnik korišten u ovom istraživanju sastavljen je na temelju osnovnih odrednica informatičkih sklonosti studentske populacije SFSZG-a.

Provedeno istraživanje pokazalo je da se studenti najčešće koriste računalom kako bi pristupili internetu te komunicirali elektroničkom poštom, što je u

of study, during which students' time with computers decreases – a trend which continues with the increasing value of the year of study.

Although this study shows that students use computers in everyday life and that they use the internet for various purposes, some of which are educational, only 56.6% of the students involved in the study positively answered the question about being familiar with the term "e-learning", demonstrated in Figure 4. There is a significant link between using e-mail as a means of communication and being familiar with the term "e-learning", that is, students familiar with this use e-mail as a means of communication more frequently than students unfamiliar with this term (r=0.240), Table 3. The χ^2 test indicates that students familiar with the term "e-learning" cite internet use for the purpose of communication and e-mail management more frequently than those unfamiliar with the term (p=0.044), Table 4.

Statistical significance is also demonstrated in the correlations between the duration of computer use and daily computer use, and familiarity with the term "e-learning"; students familiar with this term generally spend more time on computers and spend more time on computers daily than students unfamiliar with this term.

Discussion

The evaluation of the computer literacy of any segment of the population presents a complicated task, the success of which demands careful planning with targeted methods and questions that we know are appropriate for the population we are studying. The current definition for computer literacy is rather general and includes various skills ranging from mobile phone use (especially the up-to-date models), the ability to play computer games and use gaming consoles, to computer use for educational and professional purposes. Being capable of using one of the technologies was not considered sufficient to be deemed computer literate.. Unfortunately, due to the highly specialized nature of certain operative tasks, today there are people who are experts in their fields at using certain computer applications but who are cannot use otherwise basic programs . The questionnaire implemented in this study was based on observation of computer use and preferences amongst the UZSDM student population.

The research conducted indicates that students mostly use computers to access the internet, communicate via e-mail, which was consistent with the results of similar studies conducted in Europe and in

skladu s rezultatima sličnih istraživanja u Europi i svijetu (21-23). Mnogi studenti računalo smatraju i neizostavnim nastavnim pomagalom te bi se njime češće željeli koristiti bude li im bio omogućen pristup takvim sadržajima. Udjel studenata koji su se čuli za pojam e-učenja i znaju što znači, veći je proporcionalno s porastom vremena provedenog za računalom.

Zanimljivo je istaknuti da se studenti nižih godina studija češće koriste računalom od onih s viših godina. Za to postoje najmanje tri vrlo važna razloga:

1. studenti nižih godina moraju se koristiti mrežnom stranicom fakulteta kao mjestom za izvršavanje svojih studentskih obveza - na primjer prijava i odjava ispita (nema drugoga načina, jer za njih više ne vrijedi klasično prijavljivanje ispita na prijavnicama);
2. sve je više nastavnih sadržaja dostupnih na mrežnim stranicama fakulteta, posebice na nižim godinama studija, a studenti viših godina, zato što kada su se upisali još nije bilo toliko elektroničkih sadržaja, više su okrenuti tradicionalnim izvorima znanja - knjigama;
3. studenti nižih godina pripadaju naraštaju koji u slobodno vrijeme vrlo često rabi računalo za razonodu i zabavu, pa im je sasvim normalno koristiti se njime i kao nastavnim pomagalom.

Svi studenti općenito, pa tako i studenti stomatologije, u buduće će se sve češće morati koristiti nastavnim sadržajima ponuđenima na internetu, ali ne samo to - uskoro će dostupnost takvih sadržaja postati kriterij za odabir pojedinog kolegija, pa možda čak i jedan od važnijih čimbenika tijekom odabira fakulteta. O tome svakako treba voditi računa prigodom osmišljavanja nastavnih sadržaja, jer neatraktivnost i zaostalost u njihovoj prezentaciji nužno vodi prema padu studentske zainteresiranosti - kako za pojedini kolegij, tako možda i za sam studij. Zato je svaki nastavnik dužan o tome voditi računa te mora nastojati osuvremeniti i oplemeniti svoje metode prijenosa znanja mlađim generacijama i prilagoditi ih njihovim sklonostima i navikama. Ujedno terba prihvaćati nove komunikacijske tehnologije (24-26). Takav pristup ne samo da zahtijeva stručnog nastavnika, nego on istodobno mora dobro poznavati tehnološka postignuća koja se mogu primijeniti u nastavi. Pritom treba biti oprezan, jer sredstvo ne smije postati cilj - drugim riječima, nastavnik ne smije previše vremena gubiti na izradu računalnih nastavnih pomagala, a zapostaviti rad na kvaliteti nastavnog gradiva. On može osmisliti računalno nastavno

the World (21-23). Many students regard the computers as necessary course aids, and would like to use them more frequently for this purpose if the access to such content was made possible. The portion of students who had come across the term “e-learning” and know what it means, grows proportionally with the increase of time spent at the computer.

Interestingly, lower-year students use computers more frequently than upper-year students. There are three important reasons for this:

1. Lower-year students must use the School’s web pages to perform some of their student duties, such as: exam registration and postponement (no alternate means exist for lower-year students, since the new rules apply strictly to them, in other words: they do not use paper exam registration slips);
2. There is more and more online course material available on the School’s web pages, especially for lower-year courses, while upper-year students do not have as much course content available to them online, so their sources are traditional: i.e. books.
3. lower-year students belong to a generation that use computers very frequently during free time for fun and entertainment, so to them it is normal to use computers for course assistance as well.

In the future, all students will be expected by Faculty to use course material available online more frequently. Not only will they use this material, but it will also become a selection criterion for certain courses. It may help determine their future educational pathways. This is an element that deserves careful consideration when designing course material, since the unattractiveness and out-of-date appearance of their presentation inevitably leads to a drop in student interest for a certain course, and perhaps also for the study program as a whole. Therefore, each teacher should consider the factor of appeal, and should strive to create an instructional design that is fit for purpose. This will require Facuilty to continue to enhance their understanding of modern educational practices and information and communications technology when teaching younger generations of students, (24, 25, 26). Such an approach requires not only a teacher who is expert in his or her field of instructions, but also one who is able to appreciate the educational advantages of current technological advancements. There is a balance between a teacher spending excessive time preparing such course aids, and quality of the course work. The teacher can design the aids, but shouldengage a team of experts such as instructional

pomagalo, a njegovu izradu prepustiti drugima, za to educiranim stručnjacima. Prema mišljenju Hillenburga i suradnika (27), sve većom primjenom elektroničkih nastavnih materijala promijenit će se i zadaće fakulteta - one bi se mogle u većoj ili manjoj mjeri svesti na oblikovanje e-tečajeva, mentorstvo studentima i procjenu njihova znanja e-ispitima. Stomatološki fakulteti nisu dužni stvarati nove tehnologije u provedbi nastave, ali su ih dužni pratiti i primijeniti kada je god moguće.

designers to create the aid itself. According to Hillendburg et al. (27), the ever-increasing frequency electronic course material use will bring about a change in the role of the Dental school itself. Staff may be relegated to designing e-courses, mentoring students and evaluating their knowledge via e-exams. Dental Schools aren't primarily responsible for creating new technology for in course delivery, but they do have a responsibility to follow new technology and implement good educational practices where appropriate.

Abstract
This research was conducted in order to gain insight into the undergraduate student's level of computer literacy at the University of Zagreb School of Dental Medicine (UZSDM), and discover the purpose for the use of computers and the internet. The research was conducted on 297 students from all 5 years of the undergraduate program at the UZSMD; 29.3% male and 70.7% female subjects at the average age of 21 years. Each student filled in a questionnaire containing 15 questions, and the results were analysed with the Spearman correlation test and the chi square test. The co-relation between the variable: "recognizing the term "e-learning" and other determined variables was statistically analysed. The results showed that students mostly use computers for up to 2 hrs daily (77%), and the main reason cited for this, in 79.8% of the students was "surfing the net". The main purpose for using the internet was "searching for information" in 52.8% of the cases and "communication and e-mail reading" in 21%. Of the polled students at UZSDM, 5.2% do not use computers.

Received: May 3, 2007
Accepted: May 20, 2007

Address for correspondence
Marin Vodanović
University of Zagreb
School of Dental Medicine
Department of Dental Anthropology
Gundulićeva 5
HR-10000 Zagreb, Croatia
vodanovic@sfzg.hr

Key words
Computers; Students, Dental education, Distance

References

1. Schittek M, Mattheos N, Lyon HC, Attstrom R. Computer assisted learning. A review. Eur J Dent Educ. 2001;5(3): 93-100.
2. Grigg P, Stephens CD. Computer-assisted learning in dentistry. A view frm the UK. J Dent. 1998;26(5-6): 387-95.
3. Plasschaert AJ, Wilson NH, Cailleteau JG, Verdonschot EH. Opinions and experiences of dental students and faculty concerning computer-assisted learning. J Dent Educ. 1995;59(11):1034-40.
4. Preston JD. Computers in dental education. J Calif Dent Assoc. 1997;25(10):729-33.
5. Plasschaert AJ, Cailleteau JG, Verdonschot EH.The effect of a multimedia interactive tutorial of learning endodontic problem solving. Eur J Dent Educ. 1997;1(2):66-9.
6. Hawley GM, Hamilton FA, Murray F, Baggett FJ. Evaluation of a teaching aid for dental students. Eur J Dent Educ. 1998;2(3):133-7.
7. Ayoub JL, vanderboom C, Knight M, Walsh K, Briggs R, Grekin K. A study of the effectiveness of an interactive computer classroom. Comput Nurs. 1998;16(6):333-8.
8. Schleyer TK, Forrest JL, Kenney R, Dodell DS, Dovgy NA. Is the Internet useful for clinical practice? J Am Dent Assoc. 1999;130(10):1501-11.
9. Schleyer TK. Digital dentistry in the computer age. J Am Dent Assoc. 1999;130(12):1713-20.
10. The use of the Internet within a dental school. Eur J Dent Educ. 2003;7(1):27-33.
11. Packer ME, Rogers JO, Coward TJ, Newman PS, Wakeley R. A comparison between videotaped and live demonstrations, for the teaching of removable partial denture procedures. Eur J Dent Educ. 2001;5(1):17-22.
12. Bogacki RE, Best A, Abbey LM. Equivalence study of a dental anatomy computer-assisted learning program. J Dent Educ. 2004;68(8):867-71.
13. Aly M, Elen J, Willems G. Instructional multimedia program versus standard lecture: a comparison of two methods for teaching the undergraduate orthodontic curriculum. Eur J Dent Educ. 2004;8(1):43-6.
14. Wenzel A, Gotfredsen E. Students' attitudes towards and use of computer-assisted learning in oral radiology over a 10-year period. Dentomaxillofac Radiol. 1997;26(2): 132-6.
15. Amšel V. 40 godišnjica visokoškolske stomatološke nastave u SR Hrvatskoj. Acta Stomatol Croat. 1988;22(2):85-7.
16. Scott J. Dental education in Europe: the challenges of variety. J Dent Educ. 2003;67(1):69-78.
17. Knezevic G. Evaluation of the new teaching plan at the School of dental medicine, University of Zagreb: news and views. Eur J Dent Educ. 2000;4:27.
18. Jerolimov V. DentEd Visitation of the School of Dental Medicine in Zagreb. Acta Stomatol Croat. 2002;36(1):145-6.
19. Vermylen Y. The Influence of the European Union on the Dental Profession. Acta Stomatol Croat. [serial on the Internet]. 2006 [cited 2007 Jan 15];40(3): [about 10 p.]. Available from: http://www.ascro.net/index.php?id=147.
20. Illeš D, Valentić-Peruzović M, Alajbeg I. Prosthetic Dentistry on the Internet. Acta Stomatol Croat. 2002;36(3):327.
21. Komerik N. Use of the Internet among dental students in Turkey. J Dent Educ. 2005;69(4):470-5.
22. Virtanen JI, Nieminen P. Information and communication technology among undergraduate dental students in Finland. Eur J Dent Educ. 2002;6(4):147-52.

23. Rajab LD, Baqain ZH. Use of information and communication technology among dental students at the University of Jordan. J Dent Educ. 2005;69(3):387-98.
24. Walmsley AD, White DA, Eynon R, Somerfield L. The use of the Internet within a dental school. Eur J Dent Educ. 2003;7(1):27-33.
25. Reynolds PA, Harper J, Dunne S, Cox M, Myint YK. Portable digital assistants (PDAs) in dentistry: part I. Br Dent J. 2007;202(7):409-13.
26. Reynolds PA, Millar B, Dunne S. Is e-Learning 'inevitable' in dental education? Experiences from King's College London Dental Institute. Acta Stomatol Croat. [serial on the Internet]. 2007 [cited 2007 Mar 11];41(1): [about 9 p.]. Available from: http://www.ascro.net/index.php?id=215.
27. Hillenburg KL, Cederberg RA, Gray SA, Hurst CL, Johnson GK, Potter BJ. E-learning and the future of dental education: opinions of administrators and information technology specialists. Eur J Dent Educ. 2006;10(3):169-77.