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УДК 811.111:374-057.875(497.11)
DOI [10.46793/Uzdanica22.1.115K](https://doi.org/10.46793/Uzdanica22.1.115K)
Оригинални научни рад
Примљен: 27. децембар 2024.
Прихваћен: 11. април 2025.

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INFORMAL DIGITAL LEARNING OF ENGLISH AMONG SERBIAN UNIVERSITY STUDENTS¹

Abstract: Informal Digital Learning of English (IDLE) is gaining ground in the field of foreign language pedagogy. The present paper focuses on the IDLE experiences of Serbian university students with the aim of determining their most common IDLE practices and the potential influence of individual variables such as gender, amount of daily screen time, and self-perceived English proficiency on these practices. In a cross-sectional survey, a total of 143 EFL students at four different faculties of the University of Novi Sad completed a structured questionnaire developed based on existing articles that explored similar IDLE practices. The results show that the most common ways students engage with English online are related to entertainment and passive consumption (watching clips, listening to music), while active use (like writing blogs or using English learning apps) is less frequent. The perceived English proficiency is the only variable that significantly influences the students' IDLE activities. The results are interpreted in terms of their pedagogical potential for more autonomous and self-directed EFL learning in an extramural context.

Keywords: Informal Digital Learning of English, self-perceived English proficiency, English as a foreign language, passive online use of English, active online use of English.

1. INTRODUCTION

Information and communication technologies have become an inseparable part of our every-day life activities. This particularly holds true for young people, so-called Generation Z, also known as digital natives, who have been surrounded by digital technologies, the internet and social media from a very young age and are accustomed to having digital devices at their disposal anytime and anyplace. Thus, research on Generation Z shows that 95% of this generation owns or has

¹ The research was funded by the Ministry of Science, Technological Development and Innovation of the Republic of Serbia (Contract No 451-03-66/2024-03/200125, 451-03-65/2024-03/200125 i 01600).

access to a smartphone and almost all (97%) use the internet daily (Slepian et al. 2024). These habits are certainly reflected in all aspects of life, including social communication and interaction, personal development, learning practices and education in general. Foreign language learning seems to be an important part of this ongoing process as modern digital devices and social media allow fast and easy communication in international context, regardless of geographical and cultural boundaries. As most of this communication today relies on the use of English, the area of English as a Foreign Language (EFL) teaching and learning may benefit from such a situation. EFL scholars and practitioners have therefore begun to acknowledge how students are involved in language learning in their daily activities outside the official classroom and whether and to what extent this can be beneficial for their EFL proficiency (Sundquist 2019). As a result, a new field of EFL research and inquiry known as Informal Digital Learning of English (IDLE) has recently emerged. In this new and unexplored area of EFL, research reports on IDLE in the context of Serbian learners are scarce. With this in mind, the present paper aims to explore and obtain more information on IDLE experiences and practices of higher education EFL students in Serbia.

2. INFORMAL DIGITAL LEARNING OF ENGLISH

With the vast availability and use of digital devices and online resources, the potential of learning English beyond the formal classroom and curricula has been recognized (Lee 2020). English language learning experiences and practices have therefore started to be examined from another perspective, i.e. through extramural, informal learning contexts. As a result, the term Informal Digital Learning of English (IDLE) is gaining ground within the EFL field among scholars and practitioners. IDLE is defined as a self-directed and informal English learning activity that occurs in digital settings outside of school, driven by personal interest and not assessed by teachers (Lee, Lee 2019). In this case, learners themselves select the source and content to follow and concentrate on being the user of the language (Kuru Gonen, Kizilay 2023). Language learning in this context is naturalistic, as learners' primary intention is to enjoy themselves and engage in personally and professionally interesting and relevant content, so language development in this case happens spontaneously, as a by-product of online engagement (Jurković 2019).

The rise of IDLE among younger English learners has been documented worldwide (Guo, Lee 2023; Soyoo et al. 2021; Zhang, Liu 2022) and the phenomenon has attracted the attention of EFL scholars and researchers. The scope of IDLE-focused studies ranges from investigating learners' practices, experiences and preferences to assessing various educational gains that this type of language learning brings. Thus, in the context of Turkish higher education, most common IDLE practices of EFL learners are based on the use of social networking plat-

forms, music and song platforms, translation sites, video sharing sites, and movies and series on specific network platforms (Kuru Gonen, Kizilay 2023). The authors also point to the relevance of EFL teachers' guidance for effective language practice in IDLE engagement. The importance of teacher guidance in the use of digital technologies to support language learning is also highlighted by Ohashi (2019) whose research was carried out in the Japanese educational context. In her study on the use of smartphones by Slovenian university EFL learners, Jurkovič (2019) reports that these learners most frequently opt for receptive language activities, such as reading social media posts in English, while in productive and interactive activities they rather rely on the use of Slovene. As for potential educational gains, Lee and Dressman (2018) report that a diverse use of IDLE activities results in a greater willingness to communicate among South Korean university EFL learners and in that way significantly predicts their speaking proficiency. From the linguistic side, the authors report a higher productive vocabulary level among the study participants. Kusy's longitudinal case study (2017) points to the improvement of English writing skills in terms of grammatical complexity and lexical diversity as a result of the participants' online engagement. One of the frequently reported educational benefits of IDLE practices is the enhancement of autonomous language learning (Dincer 2020; Kuru Gonen, Kizilay 2023). Autonomous language learners, in turn, prove to have better language learning proficiency (Dincer 2020).

The rise of IDLE and its popularity among English learners and EFL researchers has particularly been observed in Europe and Asia (Guo, Lee 2023). In their review of IDLE, Soyoof et al. (2021) notice that most of the research has been conducted in Europe followed by Asia and North America and thus call for the inclusion of other learning contexts in future studies. In spite of a substantial body of research conducted in the European context, to the best of the authors' knowledge, reports on Serbian learners' IDLE practices and experiences are rather scarce. With this in mind, the present study is designed to address this research gap and the call for obtaining IDLE-related data from other educational contexts. In this regard, the study aims to reveal the frequency and type of IDLE engagement activities of Serbian higher education EFL learners. The addressed research questions are as follows:

1. What are the most common IDLE practices of Serbian EFL learners?
2. Do individual variables such as gender, amount of daily screen time, and self-perceived English proficiency influence learners' IDLE practices?

3. METHOD

This study relied on a quantitative approach with a cross-sectional design to explore the informal digital learning of English (IDLE) practices among Serbian

university EFL learners. The research focused on identifying the most common IDLE activities and assessing the influence of individual variables such as gender, amount of daily screen time/hours of use, and self-perceived English proficiency on these practices. This section will detail the participants, instruments, data collection, and procedures used to investigate the research questions, along with the statistical methods employed for data analysis.

3.1. PARTICIPANTS

The study used a convenience sample of N = 143 students studying at the University of Novi Sad (see Table 1).

Table 1. Research participants

		M	F	Total
Faculty of Sciences	N	34	38	72
	%	23.8%	26.6%	50.3%
Faculty of Technical Sciences	N	28	24	52
	%	19.6%	16.8%	36.4%
Faculty of Agriculture	N	6	3	9
	%	4.2%	2.1%	6.3%
Faculty of Technology	N	2	8	10
	%	1.4%	5.6%	7.0%
Total	N	70	73	143
	%	49.0%	51.0%	100.0%

Of the total number of participants, N(m) = 70 were male and N(f) = 73 were female, studying at all four years of study. The average age of the participants was 20.43 (sd = 2.01), ranging from 18 to 29.

3.2. INSTRUMENT

The instrument for this study was a structured questionnaire, developed based on two existing articles that explored similar IDLE practices (Kuru Gonen, Kizilay 2023; Jurkovič 2019). The first part of the questionnaire included demographic questions such as participants’ age, gender, year of study, and self-assessed English proficiency (rated on a five-point scale from “Insufficient” to “Excellent”). Following this, participants were asked about the amount of their daily screen time, with three options ranging from “Up to three hours” to “More than five hours” (the scale was formulated based on the results of a recent Gallup (2023) study which found that the average screen time of more than 1500 surveyed adolescents equals to 4.8 hours every day, ranging from 4.1 to 5.8 hours).

The core of the survey consisted of two parts. The first part asked students to rate 1) the extent to which they use English in their online practices in general and 2) how useful they believe English is when it comes to that use. The second part focused on the extent and frequency of using English while engaging in a variety of digital activities, such as writing messages, reading emails, watching videos, listening to music, and interacting on social media, with a total of 35 items (see Table 2 for a full list of statements). The respondents rated the frequency of these activities on a four-point Likert scale (Never, Rarely, Sometimes, Very often). Cronbach’s alpha for the scale was a satisfactory $\alpha = .915$.

3.3. PROCEDURE

The questionnaire was distributed in Serbian via *Google Forms* in May and June 2023. The participants were recruited by their language instructors through various online learning platforms used during the courses in English taught at the faculties. After the data were collected, the responses were analyzed using SPSS 25 by means of descriptive and inferential statistical tests. To answer RQ1 regarding the most common IDLE practices of Serbian EFL learners, descriptive statistics (means, standard deviations, skewness, and kurtosis) were used to summarize the frequency and usefulness of English use online across various activities. To answer RQ2, the focus of which was to examine whether individual variables such as gender, hours of use, and self-assessed English proficiency influence learners’ IDLE practices, a multivariate analysis of variance (MANOVA) was conducted to test for significant differences and interactions across these variables.

4. RESULTS

This section presents the findings related to IDLE (informal digital learning of English) practices of Serbian EFL learners. The primary focus was on the frequency of English use online and the perceived usefulness of such use, with respect to individual variables such as gender, self-assessed English proficiency and hours of device use.

Table 2 shows the results of descriptive analysis used to test participants’ reported frequency of English used while they are engaged in online activities, together with the perceived usefulness English has in such contexts.

Table 2. IDLE among university-level Serbian EFL learners

	Mean	SD	Skewness	Kurtosis
Frequency of English used online	3.52	0.60	-1.043	1.096
Usefulness of English used online	3.51	0.60	-1.033	1.078

Values of mean scores for both frequency and usefulness are high (considering the respondents rated both items on a 4-point Likert scale), which indicates that not only do the students report using English for their online practices quite frequently, but they also, overall, believe that English is very useful in those contexts.

Table 3 reports on the results of descriptive analysis of specific situations and contexts in which students use English online.

Table 3. Frequency of English use during different online activities in descending order of use

How often do you use English while doing the following:	Mean	SD	Skewness	Kurtosis
1. Watching reels / short clips	3.71	0.65	-1.303	1.796
2. Reading post and comments	3.68	0.69	-1.246	1.512
3. Listening to music	3.60	0.67	-1.573	1.638
4. Watching movies and shows	3.29	0.91	-1.002	-0.102
5. Watching tutorials for skills other than related to one's studies	3.28	0.92	-0.969	-0.247
6. Reading texts not related to one's studies	3.27	0.94	-0.981	-0.267
7. Watching study related tutorials	3.19	0.99	-0.836	-0.588
8. Reading and listening English while playing online games	3.02	1.18	-0.739	-1.055
9. Reading comments in online groups	2.97	1.15	-0.621	-1.133
10. Listening to podcasts	2.94	1.06	-0.491	-1.065
11. Writing texts	2.91	0.98	-0.503	-0.765
12. Online shopping	2.68	1.09	-0.285	-1.209
13. Using apps and tools for translation into English	2.59	1.02	0.162	-1.204
14. Reading emails	2.56	1.05	0.065	-1.201
15. Listening to daily news	2.53	1.14	-0.020	-1.402
16. Listening to lectures related to one's studies	2.52	1.10	0.034	-1.317
17. Talking in English while playing online games	2.49	1.28	0.003	-1.688
18. Reading daily news	2.48	1.22	0.029	-1.569
19. Using apps and tools for translation from English	2.48	1.05	0.248	-1.179
20. Using English online dictionaries	2.46	1.09	0.167	-1.259
21. Reading e-books	2.37	1.23	0.235	-1.539
22. Watching sports	2.36	1.18	0.201	-1.455
23. Reading sports related content	2.26	1.21	0.351	-1.460

24. Writing posts and comments	2.25	1.22	0.357	-1.466
25. Writing comments in online groups	2.25	1.22	0.346	-1.487
26. Talking to friends	2.17	1.11	0.483	-1.112
27. Texting with friends	2.10	1.12	0.545	-1.115
28. Watching English learning tutorials	2.00	1.07	0.691	-0.839
29. Using websites designed for learning English	1.98	1.12	0.708	-0.963
30. Writing emails	1.95	1.02	0.875	-0.323
31. Using apps for learning English	1.62	0.94	1.407	0.836
32. Talking to colleagues	1.52	0.79	1.685	2.630
33. Texting with colleagues	1.45	0.73	1.709	1.682
34. Writing blogs not related to one's studies	1.38	0.82	1.193	1.818
35. Writing blogs related to one's studies	1.33	0.77	1.988	1.921

From the results, it is evident that students use English most often when they are watching reels or short clips (mean = 3.71), reading posts and comments (mean = 3.68), and listening to music (mean = 3.60), with negative skewness indicating that more responses cluster toward the higher end of the scale which, coupled with sharp kurtosis values, indicates a high centrality around the mean. In terms of a low frequency of English use, the lowest mean scores come from activities such as writing blogs related to one's studies (mean = 1.33), writing blogs not related to one's studies (mean = 1.38), and texting with colleagues (M = 1.45). Their skewness is highly positive (up to 1.988), indicating that very few students engage in these activities frequently. Reading activities (e.g. reading posts and comments, reading emails) generally score higher in terms of frequency than writing activities (e.g. writing posts and comments, writing emails), suggesting that students are more likely to consume content in English rather than produce it (e.g. reading posts and comments (mean = 3.68) is much more frequent than writing posts and comments (mean = 2.25)). Activities involving talking to friends (mean = 2.17) or texting with friends (mean = 2.10) score lower than expected, which reveals that English is not often used in personal communication within this sample. The negative skewness in these categories also shows that most responses fall closer to the "rarely" or "sometimes" end of the scale. Despite English learning apps being available, their use is relatively infrequent (mean = 1.62), which may suggest that if students are using these tools they do it more frequently for casual learning or entertainment rather than for structured language learning.

In order to test whether individual variables of gender, amount of daily screen time, and self-perceived English proficiency influence learners' IDLE practices, we conducted a multivariate analysis of variance – MANOVA (see Table 4).

Table 4. Subject effects on IDLE practices among Serbian EFL learners

Source		F	p	η_p^2	Pillai's trace
Gender	Frequency of English used online	0.237	0.627	0.002	0.005
	Usefulness of English used online	0.305	0.582	0.003	
Self-assessed proficiency	Frequency of English used online	6.763	0.000	0.195	0.297
	Usefulness of English used online	3.110	0.018	0.100	
Hours of use	Frequency of English used online	2.136	0.123	0.037	0.063
	Usefulness of English used online	1.467	0.235	0.026	
Gender * Self-assessed proficiency	Frequency of English used online	1.188	0.320	0.041	0.074
	Usefulness of English used online	1.204	0.313	0.041	
Gender * Hours of use	Frequency of English used online	0.423	0.656	0.007	0.016
	Usefulness of English used online	0.528	0.591	0.009	
Self-assessed proficiency * Hours of use	Frequency of English used online	0.673	0.715	0.046	0.143
	Usefulness of English used online	1.543	0.150	0.099	
Gender * Self-assessed proficiency * Hours of use	Frequency of English used online	1.053	0.390	0.045	0.083
	Usefulness of English used online	0.883	0.495	0.038	

Corrected model for Frequency of English used online $R^2 = .326$

Corrected model for Usefulness of English used online $R^2 = .313$

The results indicate that self-assessed proficiency significantly influences both the frequency of using English ($F = 6.763$, $p < 0.001$, $\eta_p^2 = 0.195$) and the usefulness of English used in online contexts ($F = 3.110$, $p = 0.018$, $\eta_p^2 = 0.100$), with moderate effect sizes. For the variable of frequency of English used online, the model explains about 32.6% ($R^2 = 0.326$) of the variance, whereas for the usefulness of English used online it explains about 31.3% ($R^2 = .313$) of the variance. Neither gender nor hours of use have a significant impact on the frequency or perceived usefulness of English used online, nor do the interactions between these variables.

5. DISCUSSION

The goal of this study is twofold: the first goal is to determine the most common IDLE practices of Serbian EFL learners; the second goal is to ascertain whether individual variables such as gender, amount of daily screen time, and self-perceived English proficiency influence learners' IDLE practices.

As for the most common IDLE practices of Serbian EFL learners, which is the focus of the first research question of this study, the results suggest that the most common ways students engage with English online are related to entertainment and passive consumption (watching clips, listening to music), while active use

(like writing blogs or using English learning apps) is less frequent. Social interaction in English, especially with colleagues or in academic contexts, is notably infrequent compared to more casual, non-study-related uses. The results are similar to those reported by Gonen & Kizilay (2023) who found that entertainment-oriented activities such as music and song platforms, video sharing sites and series and movies on specific network platforms were the most favored and most common IDLE practices among Turkish EFL students. The receptive consumption of English-language popular culture products, such as listening to music and watching video clips is also among most common IDLE experiences of Slovene EFL university students (Jurkovič, 2019). This suggests that in the context of IDLE, students generally show greater interest in content that falls outside the formal education and that this is the context out of which they may benefit most when it comes to learning English. The results of our study also corroborate the conclusions of Lai and Zheng (2018) who suggest that while mobile devices are well-suited for facilitating social communication in informal settings, their potential for language learning may be limited by both linguistic and socio-cultural factors. Sociolinguistic factors, as noted in previous research, may play a significant role in shaping how learners use mobile devices for social interaction in language learning contexts, particularly when it comes to mobile and social media use (Byrne, Diem 2014).

The findings also show that there is a general trend of more frequent engagement with receptive activities (watching and reading) than productive activities (writing and speaking). This finding is consistent with that of Lai and Zheng (2018) who found that learners primarily used mobile devices for receptive tasks, rather than productive activities, although rare productive use was found with posting on social networking sites, or chatting with friends or classmates on instant messengers. The same also holds true for Slovene EFL learners, as reported by Jurkovič (2019). A limited involvement in interactive activities in English is explained by infrequent contacts with English-speaking individuals, i.e. the receivers of the messages are usually speakers of Slovene. Kuru Gonen and Kizilay (2023) also notice that their study participants use digital sources for writing less frequently than other tools. The finding is interesting as the prevalence of receptive over productive skills is widely recognized in the conventional classroom environment and atmosphere (Golkova, Hubackova 2014), and the same observation seems to hold true for the context of informal digital learning.

When it comes to the influence of individual variables on students' IDLE practices, the current findings point to a crucial role of perceived English language proficiency. As presented in previous section, self-assessed English proficiency significantly influences both how often students use English online and how useful they perceive their English use to be. This suggests that students who rate their proficiency higher are more likely to engage in and find value in using English in online contexts. The effect sizes for self-assessed proficiency ($\eta_p^2 = .195$ for frequency and $\eta_p^2 = .100$ for usefulness) indicate that proficiency has a moderate

impact on these behaviors and perceptions, making it a primary determinant in IDLE practices. Jurković (2019) also points out the role of perceived language competence through evident co-evolution between smartphone activities in English and perceived language competence levels in English. A study by Lai and Zheng (2018) revealed that the limited use of mobile devices for authentic learning experiences was mainly influenced by the limitations of the devices themselves and the conditions under which they were used, both of which were further complicated by learners' language proficiency. In line with this, these authors suggest that advanced learners are more likely to take advantage of the potential for authentic learning through mobile devices, as the challenges posed by the devices (e.g., small screens, the focus required) are less detrimental to them compared to learners with lower proficiency levels.

With respect to gender, the results of previous research are not entirely consistent, with some studies highlighting gender-based differences in specific areas like emotions and self-efficacy (Almusharraf et al. 2023; Korlat et al. 2021), while others show no significant differences in engagement or motivation within digital or game-based EFL learning environments (Csizér, Albert 2024). In this study, gender does not significantly affect either the frequency of English use online or the perceived utility of that use. Male and female students engage similarly with English online and perceive its usefulness in similar ways. It is possible that, because of similar access to technology and online resources, and comparable opportunities for the online use of English, differences in how male and female students interact with technology may decrease as it becomes more integral to education (Lai, Zheng 2018; Sun, Mao, Yin 2020).

The number of hours students spend using devices (e.g. phones, tablets) does not significantly impact the frequency or perceived usefulness of their English use online. In other words, simply spending more time on devices does not necessarily correlate with more or better English use. While mobile devices offer considerable potential for informal learning, their effectiveness depends on factors such as the learning environment and specific applications used, so that, despite their convenience, they do not always result in significant gains in language proficiency (Cho et al. 2018).

The results further show that there are no significant interaction effects between gender, self-assessed proficiency, and hours of use, either individually or combined. The multivariate model explains a moderate portion of the variance in students' English use online. While self-assessed proficiency is a significant factor, other unexamined variables may also contribute to how often and how usefully students engage in English online.

6. CONCLUSION

This study examined IDLE practices among Serbian university-level EFL learners with the goal of identifying the frequency of use of English in online situations and its perceived usefulness, on the one hand, and individual variables, including gender, proficiency, and daily screen time which may affect these practices, on the other. The findings reveal notable trends in how students engage with English online, particularly highlighting the prevalence of passive, entertainment-driven activities over more productive, academically oriented uses. These results are consistent with previous research conducted among EFL learners in various contexts, which similarly emphasize the dominance of receptive activities like listening to music or watching videos (Kuru Gonen, Kizilay 2023; Jurkovič 2019; Lai, Zheng 2018). Moreover, the study highlights the significant role of perceived language proficiency in shaping both the frequency and perceived usefulness of English use online, while factors like gender and hours of device use show little to no significant effect.

As they have become an integral part of our everyday lives, the potential of mobile devices to offer versatile and accessible platforms for extramural language learning by providing tools for self-paced, authentic, and social engagement with the target language can no longer be overlooked. We believe that, even though IDLE activities take place in informal contexts, beyond the control or supervision of teachers or language instructors, there are still ways that the teachers can promote EFL learning in extramural contexts. For instance, Zou, Li, and Jin (2022) emphasize the importance of fostering learner autonomy. By guiding students to use language learning apps, social media, and other digital tools independently, teachers can help students integrate English into their daily routines and become more self-directed and self-regulated learners. Furthermore, by assigning tasks such as listening to a podcast in English or taking part in language exchanges on social platforms, teachers can promote the use of English in authentic, real-world settings, which, coupled with journaling or class discussions, may help students critically engage with their learning habits and identify which tools or activities are most beneficial (Klímová 2018). Ultimately, the value of IDLE activities in promoting varied learning opportunities, motivating contexts, and improved proficiency depends heavily on the learners' level of digital literacy. Even though generations of students currently populating university classrooms are considered to be digital natives, who grew up surrounded by digital technologies, the internet, and social media, their level of digital literacy is by no means uniform – they may be more proficient in certain digital areas (e.g. social media use), while lacking more critical skills, such as critical thinking about online content, ethical use of technology, or problem-solving with digital tools (e.g. Soroya et al. 2021). In a modern classroom that takes advantage of evolving technologies, teachers can help students develop the digital skills necessary to effectively navigate and use mobile

devices for language learning by teaching them how to use apps, manage online interactions, and find reliable language learning resources (Klímová 2018).

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НЕФОРМАЛНО УЧЕЊЕ ЕНГЛЕСКОГ ЈЕЗИКА КРОЗ УПОТРЕБУ ДИГИТАЛНИХ УРЕЂАЈА МЕЂУ СТУДЕНТИМА У СРБИЈИ

Резиме: Неформално учење енглеског језика кроз употребу дигиталних уређаја добија све више простора у методици наставе енглеског као страног језика. Овај рад се бави искуствима студената у Србији у вези са њиховим активностима на дигиталним уређајима у којима користе енглески језик, а које не спадају у формални део образовања. Циљ истраживања је био да се утврди које од ових активности су највише заступљене у студентској популацији, као и потенцијални утицај појединачних варијабли као што су пол, количина времена пред екраном и самопроцена знања енглеског на ове активности. Подаци су прикупљени помоћу упитника који је креиран на основу већ постојећих анкета доступних у међународним радовима на сличну тему и дистрибуиран међу 143 студента на четири факултета Универзитета у Новом Саду. Резултати показују да су најчешће активности које укључују енглески језик везане за забаву и пасивно знање језика (гледање клипова, слушање музике), док је активна употреба (као што је писање блогова или коришћење апликација за учење енглеског) доста ређа. Једини фактор који значајно утиче на ове активности јесте самопроцењени ниво знања језика, док разлике у полу и спрам временаведеног пред екраном нису значајне. Иако фокусирани на активности ван редовног образовног система, добијени резултати имају важан педагошки потенцијал за наставу енглеског језика јер пружају добру основу за развијање аутономије и веће самосталности приликом учења овог језика.

Кључне речи: неформално учење енглеског језика употребом дигиталних уређаја, самопроцена знања енглеског језика, настава енглеског језика, пасивна употреба енглеског на интернету, активна употреба енглеског на интернету.