2025 PRACE JĘZYKOZNAWCZE XXVII/4
ISSN 1509-5304 DOI 10.31648/pj.11843 129–145
eISSN 2450-0801

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A new generation of proficient EFL users and the impact of their engagement with extramural English on their receptive vocabulary

Nowe pokolenie biegłych użytkowników języka angielskiego jako obcego oraz wpływ nieformalnej ekspozycji na język angielski na zasób słownictwa receptywnego

Abstract
The new generation of language users engage in a variety of different types of extramural activities outside the formal education context. The study involved 120 young adults (aged 20–26) who agreed to fill in a questionnaire and complete a vocabulary size test. The questionnaire inquired about the participants' engagement in different types of extramural English activities. Moreover, ten participants volunteered to take part in the qualitative stage of data collection, by completing a language diary and participating in an interview. The collected data allowed to get a closer look at the unique linguistic landscape of the new generation of EFL users in the Polish context. The participants engage with a wide variety of extramural activities, predominantly with the use of new media, such as YouTube, streaming platforms and social media. Statistical analysis of the collected data revealed that it is not the time spent on a given activity, but rather the type of its modality that most often correlates with vocabulary size. It was observed that the participants' exposure to YouTube, gaming and their habits of reading online have an effect on the size of their receptive vocabulary.

Keywords: informal exposure to language, extramural English, receptive vocabulary, new media

Abstrakt
Nowe pokolenie użytkowników języka angielskiego ma kontakt z językiem obcym również poza formalnym kontekstem szkolnym. Celem badania było określenie typu nieformalnej ekspozycji na język angielski, jak również jej wpływu na kompetencję językową grupy badanych. Badanie objęło 120 młodych dorosłych (w wieku 20–26 lat), którzy zgodzili się wypełnić kwestionariusz oraz przystąpić do testu na zasób słownictwa.

Kwestionariusz dotyczył zaangażowania uczestników w typy nieformalnych aktywności w języku angielskim w ich czasie wolnym. Ponadto dziesięciu uczestników zgłosiło się do udziału w jakościowej części badania, polegającej na prowadzeniu dziennika językowego oraz udzieleniu krótkiego wywiadu. Zebrane dane pozwoliły na bliższe przyjrzenie się krajobrazowi językowemu nowego pokolenia użytkowników języka angielskiego jako obcego w polskim kontekście. Analiza statystyczna zebranych danych wykazała, iż to nie czas spędzony na danej aktywności, ale typ jej modalności najczęściej koreluje z poziomem zasobu słownictwa. Badanie wykazało znaczącą zależność między korzystaniem z platformy YouTube, graniem w gry komputerowe oraz czytaniem tekstów w trybie online a zasobem słownictwa badanych użytkowników języka angielskiego.

Słowa kluczowe: nieformalna ekspozycja na język, pozaszkolny język angielski, zasób słownictwa, nowe media

1. Introduction

In the digital age, with English as the *lingua franca* of the Internet, the informal exposure to English and its impact on language development of its users has gained in significance. People consume content in their L2 in an authentic, meaning-focused and contextualized way. The range of different types of extramural activities and the fact that one can choose the content they engage in to their own liking contribute to the students' increased motivation, engagement and agency. Yet, it seems that the reality of formal education is far from the multimodal and multilingual digital reality, and the linguistic potential of the informal exposition to language is not fully capitalized on in a language classroom (Sundqvist and Olin-Scheller 2013).

Although the impact of the informal exposure to English on the EFL learners' language development has been widely researched in recent years (see, e.g., De Wilde et al. 2020; Hannibal Jensen 2017; Kuppens 2010; Muñoz and Cadierno 2021; Sundqvist 2009; Sylven and Sundqvist 2012), the research into extramural English exposure in the Polish context is scarce. Poland, still in transition towards a more multilingual society (Rokita-Jaśkow et al. 2023), with high language distance from English, offers an interesting ground for research into informal exposure to English. The aim of the paper is, therefore, twofold: first, to bridge the research gap and map the extramural English habits of young adults in Poland; and second, to examine the impact of the informal exposure to English on the EFL students' receptive vocabulary.

2. Literature Review

2.1. Informal exposure to language – key terms

The literature on the informal exposure to language and its impact on language competence is abundant in terms conceptualizing the informal setting of language learning (for an overview of key terms see Muñoz and Cadierno 2021). The *informal* exposure to language means that it takes place outside the walls of a classroom, it is unstructured, there is no instruction from the teacher, and it is self-regulated by the learner (Benson 2011). Similarly, Sundqvist (2009) introduced *Extramural English* (EE) as an umbrella term for all activities that EFL learners engage in through the out-of-school exposure to English. Sundqvist (2024) observes that most of the media consumption nowadays is dependent on English, which is why the term is confined to English exposure. Since the study presented in this paper involved a group of young adult learners of English and their informal language exposure, Sundqvist's term will be used henceforth to refer to the type of exposure and activities that the participants engaged with in their informal setting.

Owing to its immersive and authentic quality, the informal exposure to language in an out-of-classroom setting is conducive to *implicit* learning (Laufer and Hulstijn 2001), also referred to as *incidental* learning, which occurs "when learners' attention is focused not on language learning, but on understanding the material they engage with" (Arndt and Woore 2018: 125). What contributes to the potential language development, as a result of such an exposure, is the increased level of learner engagement and motivation that sustain and enhance incidental learning in general, and vocabulary gains in particular.

Nowadays, the informal exposure to English involves engaging in extramural activities with the use of new media. This means that their exposure to language is more frequent and extensive, operating in the "input-rich environment" (Muñoz and Cadierno 2021: 186). Yet more importantly, thanks to the accessible technology that L2 users, especially digital natives, engage in on a regular basis, the L2 input is authentic, multimodal, contextualized and individualized (Arndt and Woore 2018; DeWilde et al. 2020), which allows for deep processing to occur (see Craik and Lockhart 1972) – a crucial process in the input-intake transformation.

2.2. The impact of EE exposure on EFL learners' receptive vocabulary – previous research

From a wide variety of EE activities that the EFL users are exposed to in the informal setting, listening to music is considered to be the most popular activity (see, De Wilde and Eyckmans 2017; Kuppens 2010; Schwartz 2020; Sundqvist 2009), though its impact on language development seems to be weak. The activities that prove to have an impact on the users' L2 competence are predominantly: watching TV (d'Ydewalle and Van de Poel 1999; Kuppens 2010; Lindgren and Muñoz 2013; Sockett and Toffoli 2012; Unsworth et al. 2014) and playing video games (Kuure 2011; Reinders and Wattana 2012; Sundqvist and Sylven 2012 Sundqvist and Wikström 2015; Thorne 2008). In fact, according to De Wilde and Eyckmans (2017), gaming, i.e. engaging in all types and modes of computer video games, and computer use in general are claimed to be the most significant predictors of higher L2 proficiency. In recent years the studies investigating the impact of the EE exposure on L2 competence have also included EE activities that involve new media, such as watching YouTube (Arndt and Woore 2018). Considering the beneficial impact on the language proficiency, a substantial body of research in Extramural English revolves around the influence of informal exposure on the L2 users' vocabulary size (see, e.g., Arndt and Woore 2018; Elgort and Warren 2014; Hannibal Jensen 2017; Niitemaa 2020; Sylven and Sundqvist 2012).

There are numerous research studies investigating the impact of EE gaming on the player's language proficiency, more specifically receptive vocabulary gains. Most notably, Sylven and Sundqvist (2012) explored the correlation between gaming and vocabulary size with 86 children from Sweden, incorporating three research tools: a questionnaire, a language diary, and proficiency tests. It was concluded that gaming is positively correlated with the participants' L2 proficiency. Moreover, boys outperformed girls in this study; however, the authors do not attribute this finding to gender *per se* but rather to the types of games played by these two groups of gamers. In a similar vein, Hannibal Jensen (2017) also investigated the positive influence of gaming on the EFL learners' receptive vocabulary. By analyzing language diaries from 107 Danish primary school children and correlating gaming habits with receptive vocabulary scores from the Peabody Picture Vocabulary Test, Hannibal Jensen (2017) found a significant positive relationship between gaming and vocabulary gains. The study highlighted the motivational and immersive aspects of gaming as key contributors to this development.

Another study was designed to measure the possible influence of various EE activities on EFL learners' receptive vocabulary. Niitemaa (2020) conducted a study with 46 teenagers from Finland, by administering questionnaires and a vocabulary size test (Vocabulary Levels Test). The research findings confirmed that there is indeed positive correlation between watching films, reading online and gaming. In contrast, there was no significant correlation between listening to music and engaging in social media networks.

Much of the research studies investigating the impact of EE exposure on EFL learners' language development involved participants from primary and secondary schools. The present study aimed at bridging this gap and exploring the possible impact of EE exposure on young adult EFL learners from a more linguistically distant context.

3. Method

3.1. Aims and research questions

The new generation of young adult L2 users, born in the 21st century, spend a great amount of their free time in engaging with online activities and new media. It would be valuable to examine to what extent these activities impact their proficiency in English, being the *lingua franca* of the Internet. As compared to the previous generations of EFL users, who were exposed to English with the use of traditional media, the new generation of digital natives are exposed to different types of content, both offline and online. Additionally, much research has been conducted in the context of the Western-European countries, such as Denmark (Hannibal Jensen 2017), France (Sockett and Toffoli 2012), Flanders, Belgium (De Wilde et al. 2020; Kuppens 2010), Sweden (Sylven and Sundqvist 2012) and Finland (Niitemaa 2020). The Eastern European context has not been extensively researched with respect to Extramural English and the informal exposure to language. It would be, thus, interesting to explore the context of countries linguistically further from English, such as Poland (see Azzolini et al. 2022: 162).

The aim of the paper is, therefore, twofold: first, to map the informal exposure to English among the new generation of Polish proficient users of English, and second, to investigate the impact of the participants' informal exposure English on their receptive vocabulary. A study was designed to answer the following research questions:

RQ1: What is the new generation of proficient L2 users' engagement with extramural English activities with the use of old and new media?

RQ2: Which types of extramural activities have the biggest impact on the young adults' receptive vocabulary?

3.2. Participants

Since the study was designed in order to pilot the tools used in the project, the participants were selected through a convenience sample method. The sample comprised 120 Polish young adults within the age range between 20 and 26 years old, with the average age equalling 22. The vast majority of the participants (93%, N=111) were born in the 21st century, between the years 2000 and 2004, representing Generation Z, which is typically described as digital natives. They are referred to in this paper as the new generation of proficient EFL young adult learners. As regards their access to the Internet, 96% of the respondents declared to have either very good (N=95) or good (N=17) access to the Internet at home. Out of the 120 respondents, 76% identified themselves as female, 19% as male and 5% as other. All of the participants were proficient EFL learners, who attended a language course at the C1/C1+ level. For 58% of the respondents English was their only foreign language, 36% declared speaking two foreign languages and 6% declared a proficiency in three foreign languages. All of the respondents were university students studying in a large city in Poland, with a population more than 500,000 inhabitants.

3.3. Instruments and procedure

The participants' receptive vocabulary range was measured by means of the Vocabulary Size Test 20,000 version A (Nation 2012). The test is considered to be a valid, reliable and practical instrument. I opted for using the test with 20K vocabulary size, and not 14K, as the participants were proficient users of English and this version of the tool allows for testing vocabulary widely. The test was downloaded from the free resources at Victoria University of Wellington website. The test comprises 100 multiple choice questions with one correct answer. The test-takers get one point for each correct answer. The final score is later multiplied by 200. Finally, the score is rounded and used on a scale from 1K (1,000) to 20K (20,000) vocabulary size.

In an effort to gather data on the participants' engagement in Extramural English a questionnaire was designed with twelve questions. The respondents were asked about the hours spent on a given activity on average per week with a set of follow-up questions inquiring about the language use in free-time activities. There were also some additional questions regarding their literacy, language contact and early language start. The tool was designed

based on the literature review and on other tools used so far in the research on Extramural English (Sundqvist 2009; De Wilde and Eyckmans 2017). The number of free-time activities was expanded by including new media, such as TikTok in the social media platforms category, and separating YouTube from streaming platforms, used for watching films and other audio-visual content, and the traditional TV. The questionnaire allowed to collect self-reported declarations from the participants.

The questionnaire data was complemented by qualitative data obtained through language diary entries and interviews. The language diary aimed at collecting more detailed information on the informal exposure to English, in particular: the type of EE activities, the context in which these activities occurred, the type of content, the type of medium through which the participants were exposed to and an approximate time spent on the activity. The diary was also designed in a way to collect the students' free observations, in a dedicated space in each diary entry.

The process of data collection took five months between May and September, 2024. The questionnaire and the Vocabulary Size Test (VST) were administered online. The researcher met with groups of potential respondents online to explain the key aims of the tools and to give specific instructions on how to complete them. The participation in the study was voluntary. The participants were given ca. 40 minutes to complete both the test and the questionnaire. The process of completing the questionnaire and the test was anonymous, unless a participant decided to take part in further stages of the study and left their e-mail address in the dedicated space in the questionnaire. In the end, 10 participants volunteered for keeping a diary entry. First, the written consent was obtained. Next, each participant received a file with the language diary, including detailed instructions. The participants were asked to keep the diary and note down their self-observations for 14 consecutive days. As soon as they finished, they were asked to send back the completed entries and meet for a short interview. A total of 140 diary entries were obtained and later coded.[1]

All statistical analyses were conducted using IBM SPSS Statistics 29 software. The analyses included basic descriptive statistics, Spearman's *rho* correlation analysis and one-way ANOVA. A significance level of $\alpha = .05$ was adopted to assess statistical significance.

[1] In this paper emphasis is placed on the quantitative data results; for qualitative data results see Wolanin (2025).

4. Results

4.1. The participants' engagement with Extramural English free-time activities using old and new media

First, basic descriptive statistics of variables indicating various online activities, VST results and vocabulary size were calculated (Table 1). All variables describing time spent on online activities included only observations indicating more than 0 hours. In addition, the table includes

Table 1. Hours spent on extramural activities in a week

Variable		n	Mean	Median	Standard deviation	Skewness	Kurtosis	Min	Max
Social media use	TikTok[a]	81	10.44	7.00	8.46	1.36	2.44	.50	45.00
	Instagram[a]	103	6.26	4.50	5.82	1.61	2.61	.50	28.00
	Facebook[a]	89	3.29	2.00	3.78	3.00	10.56	.50	21.00
	X[a]	57	6.96	4.00	10.40	3.81	16.27	.50	60.00
	Social media use total	120	18.16	14.50	15.81	2.43	9.51	.00	110.00
Audio-visual content	YouTube[a]	109	8.71	6.00	10.07	3.39	17.42	.25	75.00
	Movies & TV series[a]	106	8.93	5.00	14.64	7.12	62.09	1.00	140.00
	TV[a]	18	2.44	2.00	1.65	1.47	2.13	1.00	7.00
	Audiovisual content total	120	16.17	12.50	18.32	4.81	30.01	.00	150.00
	Music[a]	116	19.90	10.00	22.93	2.28	6.16	.33	130.00
Reading	Books[a]	101	6.00	5.00	6.03	2.63	10.06	1.00	40.00
	News, articles online[a]	73	1.94	1.00	1.70	1.84	2.73	.50	7.00
	Information searching[a]	117	4.94	3.00	5.52	2.50	6.71	.20	30.00
	Reading total	120	11.04	9.00	8.64	1.44	2.23	1.00	44.00
Gaming	Single-player games[a]	54	6.96	5.00	5.96	1.16	.73	.50	25.00
	Multi-player games[a]	43	10.64	7.00	10.22	1.86	4.45	.50	50.00
	Gaming total[a]	65	12.82	8.00	12.42	1.54	2.48	1.00	60.00
	Activities total	120	82.62	66.25	55.10	2.27	10.11	14.50	416.50
	VST result	120	56.83	56.00	13.45	-.09	.26	10.00	91.00
	Vocabulary size [in thousands]	120	10.96	11.00	2.71	-.01	.13	2.00	18.00

[a] Observations indicating 0 hours were excluded from this zero-inflated variable.

indicators of total time spent on: social media (TikTok, Instagram, Facebook and X), consuming audiovisual content (YouTube, movies & TV series and traditional TV), reading (books, news, articles and information searching), as well as total gaming time.

Most of the variables indicating various online activities were characterized by highly skewed distributions, which indicated a need to use non-parametric tests. Vocabulary size was, however, characterized by low skewness and kurtosis, which indicated that this dependent variable could be examined with standard parametric tests.

Searching for information (n=117) and listening to music (n=116) were the two most popular extramural activities in terms of the number of participants. Listening to music was also the activity that the participants spent the most time engaging in during the week, with more than 19 hours in a week. The respondents also spent a lot of time on various social media platforms, with a mean score of the total social media use amounting to more than 18 hours in a week. In this category, Instagram was the most popular platform (n=103), yet in terms of the hours spent on social media, using TikTok appeared to be the most time-consuming activity, with more than 10 hours in a week. The respondents also often engaged in watching YouTube (n=109) and using streaming platforms for watching movies and TV series (n=106). On average, they spent more than 8 hours on each type of activity in a week. Out of the 120 participants, 54% (n=65) declared playing computer games in their free time. Although single-player computer games were more popular (n=54), the respondents reported that they spent more time playing multiplayer games, with more than 10 hours in a week, which is, on average, 3 hours more than on single-player games.

The data obtained through the language diary confirmed that the most popular and time-consuming activities are those represented in the questionnaire, although in a slightly different order (see Table 2 below), with watching films and TV series on streaming platforms as the most popular and most time-consuming activity. However, the diary data allowed also to observe more niche activities that the participants were engaged in during the period of self-observation, and these were: playing online games on their mobile devices (n=3), listening to podcasts (n=3), doing workouts with an English trainer online (n=3), taking online courses (n=2), doing online research (n=2), learning an additional language in English (n=2), listening to audiobooks (n=1), watching traditional TV (n=1), playing board games (n=1), watching sports (n=1), and singing (n=1).

Table 2. The most popular EE activities (diary data)

EE activity	n	Time spent[a]
Watching films & TV series (streaming platforms)	9	4.7h/week
Listening to music	5	4.6h/week
Communicating with people	8	4.44h/week
Scrolling social media	8	3.75h/week
Playing computer games	3	3.5h/week
Reading a book	8	3.31h/week
Watching YouTube	9	2h/week
Reading online	7	1.43h/week

[a] The time spent on a given activity was calculated by taking the mean score of the total time spent by those who engaged in the activity.

Based on the questionnaire and diary data it could be summarized that the participants' EE exposure is extensive and varied, involving a range of activities across both old and new media.

4.2. The young adults' engagement with extramural English free-time activities and its impact on their receptive vocabulary

Next, the correlation between engagement in extramural activities and vocabulary size was examined. Spearman's rank correlation was used to assess the relationship between the time spent on each online activity and vocabulary size. The results of the analysis can be found in Table 3 below.

The analysis revealed several statistically significant results. Vocabulary size was significantly and positively correlated with engagement in YouTube (ρ =.33, $p < .001$) and the size of this relationship was medium, suggesting that higher YouTube activity is associated with a larger vocabulary. Similarly, engagement in information searching (ρ =.18, $p < .05$) was positively, but weakly associated with vocabulary size. Although there was no significant correlation between the time spent on reading books, there was a weak positive correlation between total reading time (ρ = .19, $p < .05$) and vocabulary, which included online reading habits. However, information searching might be mostly responsible for this effect. Times spent on both single-player (ρ =.29, $p < .05$), and multi-player games (ρ = .37, $p < .05$), as well as total gaming time (ρ = .31, $p < .05$) showed significant positive correlations with vocabulary size. The effect size was weak for single-player games and moderate for multi-player games. Overall, the total engagement

Table 3. Spearman's rank correlation coefficients for engagement in online activities and vocabulary size

Engagement in extramural activities	Vocabulary size
TikTok	.11
Instagram	.00
Facebook	-.03
X	-.04
YouTube	**.33*****
Movies & TV series	-.01
TV	.31
Music	.08
Books	.15
News, articles	.10
Information searching	**.18***
Single-player games	**.29***
Multi-player games	**.37***
Social media use total	-.09
Audiovisual content total	.18
Reading total	**.19***
Gaming total	**.31***
Activities total	**.20***

*** – $p < .001$; * – $p < .05$

in EE activities ($\rho = 0.20$, $p < .05$) demonstrated a positive correlation with vocabulary size, indicating that increased overall engagement in online activities is associated with a larger vocabulary.

4.3. Language preference in the young adults' informal exposure to language

The follow-up questions in the questionnaire inquired about the participants' language preference in engaging with different types of extramural activities. As regards the respondents' language preference in using social media, the vast majority of the participants declared that they engage with the English content more than the Polish content when using social media, playing computer games and watching YouTube.

When asked about their language preference in watching movies and TV series on streaming platforms, the majority of the respondents chose English

subtitles (71.7%). The remaining participants chose Polish subtitles (12.5%) or reported watching them without subtitles (11.7%). Only one person selected watching movies and TV series with a Polish voiceover (see Table 4 below).

Table 4. Language preference in using streaming platforms

When I watch a film/a TV series in English on a streaming platform I usually watch it:		
	n=120	%
without subtitles	18	11.7%
with English subtitles	86	71.7%
with Polish subtitles	15	12.5%
with a Polish voiceover	1	0.8%

The next step of the analysis examined whether the participants who watched English-language films with English subtitles, with Polish subtitles and without subtitles differed in their vocabulary size. One subject who watched movies with a Polish voiceover was excluded from the analysis. One-way ANOVA for independent samples was used to compare the groups, and the results are shown in Table 5 below.

Table 5. Differences in vocabulary size between participants who watch movies with and without subtitles

Dependent variable	Group	*n*	*M*	*SD*	*F*	*df*	*p*	η^2
Vocabulary size	English subtitles	86	11.07	2.65	4.84	2; 116	**.010**	.08
	Polish subtitles	15	9.20	2.11				
	no subtitles	18	12.00	2.91				

Note: *n* – number of observations; *M* – mean; *SD* – standard deviation; *F* – test statistic; *df* – degrees of freedom; *p* – significance; η^2 – effect size

The test result was statistically significant, indicating that the groups differed in their vocabulary levels. The strength of this effect was moderate. Post-hoc pairwise comparisons with Bonferroni test showed that the group watching movies with Polish subtitles was statistically lower in their vocabulary size than the group watching movies with English subtitles (p = .037) and the group watching movies without subtitles (p = .009). Participants who declared watching movies with original English audio and those watching movies with both English audio and subtitles, did not differ in their vocabulary size.

The participants were also asked about their habit of following the lyrics to English songs. The participants declared following the lyrics more or less often. There were no statistically significant results between the frequency of following the lyrics of a song and the respondents' vocabulary size test (ρ =.04, p < .05).

The respondents reported on a number of books they read in total in the previous 12 months and the number of books they read in English during that period. Their reading habits were analysed for possible correlation with their vocabulary size test results (see Table 6 below). The analysis showed that there was a statistically significant, positive correlation between the number of books read in English and vocabulary size. The effect size suggests that both variables were moderately associated.

Table 6. Spearman's rank correlation coefficients for the number of books read and vocabulary size

Number of books read	Vocabulary size
Total books read	.09*
English books read	**.30*** **

*** – $p < .001$; * – $p < .05$

The statistical analysis allowed for an insight into Polish young adults' extramural habits and the impact on their vocabulary size.

5. Discussion

Addressing the first research question, the participants reported spending a considerable amount of their free time on engaging with a wide range of EE activities, being exposed to authentic, individualized and multimodal input. The most popular EE activity was listening to music, which seems to be in line with other studies (De Wilde and Eyckmans 2017; Kuppens 2010; Schwartz 2020; Sundqvist 2009), alongside watching films and TV series, using social media, and reading online (see Niitemaa 2020). The language diary data allowed for a more nuanced insight into their EE habits and revealed a wide array of EE activities. The participants engage with different types of modalities, on a variety of topics that they consider relevant and interesting. Polish young adults seem to immerse themselves in the English content online – their language preference during free-time activities is dominated by English.

What can also be observed is the marginalization of traditional media – the participants spend a considerable amount of time on activities involving new media. To illustrate, watching traditional TV is no longer a popular activity, which has been replaced by watching YouTube or using streaming platforms. This finding is important to address as the substantial body of research investigated the impact of subtitled traditional TV on incidental vocabulary learning (e.g., d'Ydewalle and Van de Poel 1999; Lindgren and Muñoz 2013; Kuppens 2010), yet the question remains whether these findings are applicable in the context of the audiovisual input transmitted through new media. The findings confirm that there is indeed a positive correlation between the time spent on YouTube and the participants' vocabulary size. This might be explained by the fact that the content the YouTube users are exposed to is more individualized and multimodal – the YouTube users consume the content by watching/listening to the videos, as well as reading and writing comments, thus interacting with the community of viewers. It also contributes to the users' increased motivation and engagement (Arndt and Woore 2018).

As regards the impact of the EE activities on the participants' receptive vocabulary size, a positive correlation can be found in a number of EE habits. Those participants who engaged more in EE activities that involve audiovisual L2 input, including watching YouTube or films and TV shows on streaming platforms, had significantly higher scores in the vocabulary size test. It was confirmed that watching movies and TV series with English subtitles impacts their vocabulary size more than watching content with Polish subtitles, which corroborates findings from other studies that also investigated the audiovisual authentic language input (d'Ydewalle and Van de Poel 1999; Kuppens 2010; Lindgren and Muñoz 2013; Sockett and Toffoli 2012; Unsworth et al. 2014). The findings also support the widespread claim that gaming positively correlates with the vocabulary size (see also, e.g., De Wilde and Eyckmans 2017; Niitemaa 2020; Sundqvist and Sylven 2012; Sundqvist and Wikström 2015; Thorne 2008). Although only 54% of the participants reported on their time spent on gaming, there was a strong correlation between the time spent in both single- and multiplayer modes and their vocabulary size. The participants' reading habits were also investigated. The findings showed that even though time spent on reading books is not correlated with the L2 user's vocabulary size, the number of books read in English is, which might be connected with the participants' general L2 proficiency – proficient L2 users would read more books in English, being exposed to more L2 input than those less proficient students. Many of the respondents also reported spending much time on reading content online,

which was also positively correlated with receptive vocabulary size (also observed by Niitemaa, 2020). When it comes to the participants' engagement in social media consumption, although they admitted spending much time on various social media platforms, there was no correlation between their time spent there and their vocabulary size, a result that corroborates Niitemaa's study (2020). This might be best explained by the depth of processing theory – since the mere scrolling on social media requires shallow processing, despite the extensive exposure to L2 input, not much of new vocabulary is retained (Craik and Lockhart 1972).

6. Concluding remarks

Despite the linguistic distance from English, the results indicate that there are similar tendencies and patterns between Poland and countries linguistically closer to English. Owing to the common and affordable access to the Internet, the new generation of proficient learners of English in Poland seem to be exposed to English on a regular basis and to a great extent. In fact, this engagement with extramural activities and the informal exposure to English affects the learners' receptive vocabulary size, particularly those activities involving multimodal input, such as gaming, or watching YouTube. Indeed, it is the type of input, rather than frequency of exposure, that has an impact on language development.

The present study is, however, not without its limitations. Similarly to a vast array of previous studies, it investigated only one aspect of linguistic competence, i.e. receptive vocabulary. It would be necessary to explore other areas of language development, including metalinguistic knowledge, the use of idiomatic language, knowledge transfer or pragmatics of language use. More importantly, the study does not account for the digital transformation prompted by the COVID-19 pandemic and the shift to remote education, which may have significantly influenced Generation Z's patterns of informal language exposure. It would be, thus, valuable to investigate the potential effects of the pandemic and emergency distance education on the participants' media consumption and informal language exposure.

Notwithstanding, there are several teaching implications that could be drawn from the study's findings. First and foremost, there is a need for language educators to capitalize on the students' informal exposure to English also in their formal education setting. This could be done by allowing them to bring their informal experience to a language classroom, in form of homework assignments or project work. Secondly, it is important

to raise the learners' meta-linguistic awareness and sensitivity to language in an effort to maximise the learning potential of their informal exposure and monitor their language development more effectively. Finally, since the learners' contact with languages in the online reality is in fact a translingual practice, it seems vital to promote the translingual approach to L2 education in teaching programmes, especially in countries that are in transition towards increasingly multilingual, such as Poland.

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