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Foreign language vocabulary development: media-driven learning in the informal context

This study explored the impact of informal learning on the acquisition of English idioms, operating under the assumption that idioms' relatedness to lexicon makes the acquisition of idioms less associated with formal English as a foreign language (EFL) teaching, which tends to primarily focus on teaching grammar. The primary goal of this study was to evaluate the effects of informal learning on the acquisition of English idioms in view of everyday exposure to English through various media. The study was conducted on the students of preschool and teacher education studies (N=88; University of Zadar), and it incorporated a brief questionnaire regarding their habits when it comes to watching films, playing videogames, the use of social media etc., as well as a test containing 60 multiple-choice questions with examples of various English idioms. Hierarchical regression analysis revealed that the best predictor for the knowledge of English idioms is the frequency of listening to English and American music, while other significant predictors were the frequency of watching YouTube videos with foreign content, the frequency of playing videogames, the grades achieved in English language-teaching classes throughout high school and the scores on the English-language tests administered at the end of the first semester at the university; the total predictive value of the examined variables was surprisingly high ($R^2=0.612$). Aside from discussing the implications of these results, the paper also reflects upon the fact that the frequency of watching English and American movies/TV shows turned out to be a negative predictor despite the positive correlation with the overall results on the test, as well as on the fact that the frequency of using social networks had no impact on the acquisition of English idioms whatsoever.

1. Introduction*

While there is a considerable disparity in terms of defining idioms with respect to their compositionality and opaqueness, the widely used definition of the phenomenon across dictionaries exploits the idea that you cannot easily predict their meaning by solely looking at the constituents that make up the phrase in question. *Oxford Dictionary of English Grammar* (1998: 204) provides the following definition: “A string of (more or less) fixed words having a meaning that is not deducible from the meanings of the individual words, e.g., *over the moon*, *under the weather*, *by the skin of one’s teeth*, etc”. They have been said to incorporate a wide range of phenomena, such as metonymy, metaphor, similes, pairs of words, phrasal verbs, grammatical idioms, and sayings (Kövecses and Szabó 1996: 327).

However, some clear dividing points still exist between the traditional approaches to idioms and the more recent, cognitivist approaches to the phenomenon. The dispute partly relates to the degree to which the meaning of certain idioms can be predicted, i.e., are we to define idioms rigidly as in the *Oxford Dictionary of English Grammar*, where the meaning simply cannot be deduced from its constituents, or are we to take into consideration some linguistically extralinguistic factors which have nonetheless become narrowly tied with the lexicon itself, which are productive in a sense, and which indeed help us predict the meaning of many idioms (at least to a certain point). The latter issue directly relates to how we approach the fluidity between the lexicon and the linguistically external knowledge of the world. Traditional views suggest that the meaning of idioms is to be deconstructed independently of any conceptual system, and the idioms are to be viewed in the same way as words – independent of each other with a meaning that is somewhat arbitrary (see Hockett 1958; Katz and Postal 1963).

A relatively modern take on the issue of idioms suggests that their meaning is not as arbitrary as it may seem, that is, their meaning is motivated by the general knowledge of the world surrounding us, and this general knowledge has become deeply embedded in our cognition influencing both our production and interpretation of language (see Gibbs 1992; Gibbs et al. 1997; Lakoff 2008 and 2014). In other words, while the traditional view suggests that you cannot really deduce the meaning of idioms by just looking at their constituent parts, the modern take on idioms argues that you would, in fact, be able to deduce its meaning by utilizing the conceptual representation of the idiom in question.¹ Nevertheless, this is not to

* We would first like to thank the reviewers for their valuable insights that helped greatly improve our paper, such as the recognition of the present study’s reliance on students’ self-report, its limitations with respect to the inferential potential on the variables not-directly addressed through the questionnaire, and a clearer framing of the idiom interpretations on the multiple-choice questions and the distractors employed in the instrument design.

1 In this context, the most prominent theory has emerged approximately 40 years ago as a part of the cognitivist tradition, now referred to as ‘Conceptual Metaphor Theory’ (CMT), which proposes that metaphor as such is not only linked to language but is an integral part of the human thought in general (Gibbs 2011).

say that all idioms can be easily understood with the help of conceptualization and the general knowledge utility; some idioms, can be quite difficult to semantically disentangle and the concepts they represent may seem rather independent of the mental imagery they are tied with (consider, for instance, the lack of obvious relation between the meaning and the mental imagery in the idiom *think someone hung the moon*). This is the main reason why cognitive linguists tend to speak in terms of “motivation” and not “prediction” when it comes to the meaning of idioms and how we conceptualize them (Kövecses and Szabco 1996: 330).

When it comes to the classification of idioms and the lexicographic endeavours to register their occurrences in a given language, dictionaries tend to approach the matter in two different ways. The first, where the idioms are listed according to a particular lexeme which they contain, seems to be the most common one (see dictionaries such as *Longman Dictionary of English Idioms*, 1979, or Ayo's *Oxford Dictionary of English Idioms*, 2010). For instance, the idioms which contain the word *nail* can be listed in the following manner: *hard as nails*, *hit the nail on the head*, *nail the colours to the mast*, *a nail in the coffin*, etc. Other dictionaries might organize their entries around the semantic properties that certain idioms tend to share, that is, they might be ascribed to a more general semantic category that encompasses all examples with a shared underlying theme (such is the case towards the end of Siefring's *Oxford Dictionary of Idioms*, 2005).

In order to explore how foreign language students acquire the meaning of English idioms, we approached the phenomenon through the lenses of their respective semantic categories, which should in turn reveal something about the character of the everyday English language students encounter and the media through which they encounter it most (whether in formal or informal settings). The focus of the paper is on the role of informal learning, which has been defined in opposition to formal and non-formal types of learning. The latter two have been often interpreted as organised modes of learning; non-formal learning tends to be organised as well, but its definition has been rather fluid for some time (see Werquin in OECD, 2007). In order to systematize and provide a somewhat consistent definition of different types of learning, a document by OECD (ibid. p. 4) operationalizes formal, non-formal and informal learning in detail, but also adds the term semi-formal mode of learning in order to capture all relevant points of distinction. Based on two criteria, the document separates the 4 types: (1) formal learning has learning objectives and happens intentionally, (2) non-formal learning lacks learning objectives but happens intentionally, (3) semi-formal happens unintentionally but has learning objectives and (4) informal learning lacks learning objectives and does not happen intentionally. In other words, informal learning differs from the rest in the sense that it lacks any degree of organisation, it is typically experiential in nature, and learners acquire knowledge without necessarily being aware that they are learning, just as one might be unaware that they are learning English while listening to English music.

2. Previous research on the acquisition of idioms

Some studies dealt with the role of context and the role of transfer in the acquisition of idioms (see Irujo 1986; Liontas 2003; Asl 2013; Cieślicka 2015). In foreign language acquisition, incidental learning² and context have already proven to be beneficial for vocabulary development (see Yoshii 2006; Webb 2008; Ahmad 2012; Dabaghi and Rafiee 2012, and others). When it comes to transfer, the easiest idioms to both comprehend and produce for foreign language learners tend to be those which are identical in the native and the target language, and, as can be expected, those that share some degree of similarity also tend to be comprehended better than idioms that completely differ between two languages (Irujo 1986). These results were corroborated by Liontas (2003), who also added that idioms in a foreign language can be understood out of context if they share a concept, number, and the selection of lexemes (for instance, the Spanish *buscar una aguja en un pajar* is identical to English *to look for a needle in a haystack*). Furthermore, the results of these studies tend to converge around the point that context seems to be a crucial element for the understanding and learning of idioms, significantly affecting, and facilitating the acquisition of these lexical units and that any sort of decontextualized teaching should be avoided (see Liontas 2003; Asl 2013). Cieślicka (2015) went on to conclude that the acquisition of idioms in a foreign language is best explained by the Competition Model (see MacWhinney 1997, 2002, 2008) and the so-called Parasitic Hypothesis (see Hall 2002), whereby the learner is at first heavily affected by the conceptual imagery of the corresponding L1 lexical item. It is only later that the newly acquired lexical item in the foreign language gradually replaces the L1-based conceptual representations, establishing their own L2 conceptual representations of the lexical item in question and forming a direct link between the represented concept and the word form. What starts out as a parasitic conceptual hijacking from the L1, only later guides and restructures one's lexical development.

Some of the research (see Kövecses 2001; Vasiljević 2011; Samani 2012; Chen and Lai 2013; Kömür and Çimen 2013; Lechner 2015) explored how the notion of conceptual metaphors and derivable meaning in idioms can help in the teaching process. In other words, since idioms have lately been identified as an expression whose meaning can be deduced by observing their constituent parts and exploiting their figurative representations, the question becomes whether this fact can help us in teaching English idioms to non-native speakers. The research data is more or less homogenous when it comes to assessing the utility of cognitive-oriented ap-

2 As Read (2000: 43–44) suggests, 'incidental' is a term that often causes misunderstanding in L2 acquisition studies, and it should be distinguished from learning that is completely 'unconscious' (if such a thing is even possible). Instead, the term is often used to imply situations where the learners are given listening or reading tasks containing target vocabulary without being warned previously to pay attention to the words or phrases that they will be tested for afterwards (and without the warning that the test of such kind will take place afterwards). Therefore, 'incidental' learning in practice corresponds to informal learning where the researcher controls the input and is able to more directly assess the effects of it.

proaches to the teaching of idioms, with the prevailing tendency of results indicating a considerable benefit from such approaches, even in EFL (English as a Foreign Language) learning in general. Nevertheless, when it comes to idioms, there are certain considerations that need to be addressed. Chen and Lai (2013) make the following arguments: (1) the fact that students are made aware of conceptual metaphors will not grant them automatic access to them when processing a particular idiom; (2) learners of idioms require instructions that are rather explicit when it comes to differences between L1 and L2 culture and the effect of these differences on the interpretation of the idiom and (3) learners should be made aware that not every idiom can be deconstructed with the help of conceptual metaphors. Khonbi and Sadeghi (2017) explored how different ways of instruction could improve learners' idiomatic competence, differentiating between short movie clips, sentence uses, definitions and role-playing as modes of teaching. Although the sample was rather small (N=47), the results interestingly showed that the most effective mode of teaching was role-play, followed immediately by movies. They interpreted this in the context of learners being able to visualise the idioms, which in turn helped them to memorize these alongside their verbal forms. The research on conceptual motivation and the effects it has on foreign idiom acquisition has prompted us to explore an additional aspect of such a process – the amount of exposure to English in various environments and the effect that this exposure might have on the ease/capability to acquire targeted idioms.

Some recent studies have already explored specific aspects of English idiom learning and teaching in the Croatian EFL context (see Pucelj 2018; Barčot and Milčić 2019; Jelčić 2014; Jelčić Čolakovac, 2019). Similar to our research, Jelčić (2014) conducted questionnaires with multiple-choice questions, but her focus was on determining the effects of context, age, familiarity and decomposability degree³ on the processing of idioms in students at various educational levels (from elementary school to graduate level studies). The results indicated that context played a facilitating role in idiom comprehension only in high school learners, whereas other age groups performed better on noncompositional idioms in no-context conditions. She finally concluded that students' awareness of the idiom acquisition methods should help them discern the most effective ways of learning (ibid. p. 390). In her more recent study (2019), Jelčić Čolakovac additionally focused on the most effective learning strategies in students' acquisition of foreign idioms in English by comparing teaching methods anchored in either explaining idioms' etymological background or encouraging rote memorization strategies. In the subsequent test evaluating their productive knowledge, the groups of students that were

3 A principle of compositionality states that the meaning of a particular language expression can be derived from the meaning of its immediate constituents. The less idiomatic idioms are more susceptible to decomposition, i.e., the general and widely-used definition of idioms as phrasal patterns with meanings that go beyond the straightforward sum of their constituents implies that idioms are noncompositional by default, though it is now clear that idioms differ in the degree of compositionality and can display consistent structures (Goldberg 2015).

presented with additional non-verbal information about idioms (whether novel or pre-taught idioms) through etymological notes outperformed the students who relied solely on rote memorization techniques. According to the author, providing students with the etymological information about the idioms helped students to store their meaning in both verbal and non-verbal sense, i.e., etymological information invoked the mental imagery associated with the meaning of the idiom and in turn made it far easier to retain the figurative language more lastingly.

While the role of various modes of formal education has been assessed across a number of age groups of EFL learners, the research on Croatian students that focuses exclusively on the informal idiom acquisition strategies has been rather scarce. For example, one recent study on young EFL learners (Erk and Ručević 2021) has questioned the relevance of formal instruction in preschool children, providing data that points towards the usefulness of a multilingual environment as opposed to a monolingual setting with formal education. Expanding on the premise that English has become the second language to Croatian speakers via media exposure and informal modes of learning, Bogunović and Ćoso (2019) analysed the lexical access in L2 depending on participants' L2 proficiency and associative links between L1 and L2 items in terms of meaning, but they also looked at the interdependence between exposure to English language and English proficiency. Activities such as listening to music (or radio), watching movies and TV shows, internet browsing, writing and reading for academic purposes, had significant effects on participants' knowledge of the English language (ibid. p. 10). Some research has investigated the impact of spontaneous foreign language learning in the Croatian context (see Mihaljević Djigunović and Geld 2002; Mihaljević Djigunović et al. 2006), but most of them addressed the issue indirectly. For instance, when it comes to the enrichment of the L2 lexicon in learners whose first language is Croatian through various media and informal modes of learning, the research has consistently shown the overwhelming penetration of the English language into everyday discourse (see Brdar 2010; Runjić-Stoilova and Pandža 2010; Hudeček and Mihaljević 2015; Balenović and Grahovac-Pražić 2016; Balenović and Čuljat 2018; Kuhar 2021, and others).

Therefore, we know the impact that exposure to the English language in informal settings can have on the use of the native language, and it is often interpreted as ultimately detrimental to the lingual and cultural richness of a particular community. The question then becomes whether any of this influence can be interpreted in a positive light and whether it can be further used as a mode of teaching, supplementing the traditional approaches to language education. Janeš (2021) analysed the language of video games as a strategy to expand one's English vocabulary in Croatian elementary school pupils. Her research revealed that the pupils tend to use English words rather spontaneously while playing video games, as well as that there was a difference when it comes to pupils' understanding of the meaning of particular words in relation to their exposure to the English language.

Brodarić Šegvić (2019) observed the incidental acquisition of English vocabulary in Croatian high school students by conducting a questionnaire regarding vocabulary learning strategies and their exposure to English in informal settings. Her results indicated that students indeed differ when it comes to English proficiency regarding their willingness to acquire English vocabulary through media in addition to formal education. The drawback of her study was that it relied mostly on the self-evaluation when it comes to the media they considered to be most beneficial for their acquisition of English vocabulary (such as films/TV, videogames, music, etc.) and the only conclusion was made in relation to school grades-based group differences and their self-reported language benefits from various media (ibid. p. 41–42). In our research, we examine a direct link between the amount of exposure to the English language in informal settings and the scores achieved on the English Idiom Test (EIT)⁴.

3. Methodology

3.1. Sample and study design

The research was conducted on the students of education studies (N=88) (at the Department of Preschool and Teacher Education, University of Zadar). The majority of teacher and preschool teacher education studies in Croatia traditionally include solely women, which consequently affected our sampling in view of male students being completely absent from the sample. The students were presented with a questionnaire consisting of two parts: the first one incorporated a set of questions regarding their habits when it comes to watching films, playing videogames, the use of social media etc. (our independent variables), while the second part included a test containing 60 multiple-choice questions with examples of various English idioms written out of context (our dependent variables; the EIT). The questionnaires were disseminated through the national digital platform intended for higher education – Merlin e-learning system. They were administered to students within the classroom setting, with researchers present to address any potential technical issues that might arise and ensure that the questionnaires were completed candidly and responsibly.

The study was initially conceived to tackle the issues surrounding the effects that media-driven informal learning and incidental exposure to English can have on foreign language vocabulary development but following the design and administration of the questionnaire, it later transposed to the evaluation of both informal learning effects and key factors behind students' comprehensive abilities in terms of English idioms. In other words, it seemed incomplete to discuss teaching

4 It is important to point out that the present study relies on students' self-report to measure the amount of exposure to the English language, and makes use of such questionnaire items to gather this data. In other words, the reliance on self-reported data needs to be acknowledged for a more accurate representation of the current research methodology and its alignment with prior studies.

and learning potentials without providing some examples that illustrate students' reasoning when determining the meaning of a particular idiom. In this context, the study addressed the following research questions:

- (1) How well do students of education studies comprehend common English idioms with respect to their corresponding thematic categories?
- (2) Which mode of informal learning is the best predictor of success on the EIT?

3.2. Instrument design

In order to see just how much influence various modes of informal learning exert on idiom acquisition, we decided to separate the idioms according to their respective semantic categories by paying attention to their salience and frequency in everyday setting.⁵ Note that these categories were not made obvious to the students during their solving of the test and that they remained unaware of the manner in which we separated the categories later in our analysis; the purpose of such lack of disclosure was to avoid providing students with the information that might help them in solving the test (for instance, if they had known that one of the categories of studied idioms were technology-related ones, they could have recognized the answers associated to technology and opt for them in cases of doubt). The division of idioms into 4 thematic units was inspired by the classification of idioms outlined at the end of *The Oxford Dictionary of Idioms* (Siefring 2005: 323–340). For example, *The Oxford Dictionary of Idioms* contains a variety of different categories that are even more restrictive in their common themes. For example, idioms are listed into groups with following topics: 'Anger and annoyance', 'Appearance', 'Change', 'Crime and punishment', 'Duty and responsibility', 'Futility', 'Misfortune and adversity', 'Traitors and treachery', etc. Although the students were either freshmen or in their second year of study, the obvious choice regarding the general semantic category of idioms they might be exposed to was the domain of education⁶, while the other categories were posited because of their assumed omnipresence in both popular culture and media (cf. Subrahmanyam and Šmahel 2011; Atay et al. 2021). These included: violence-related idioms, relationships and romance-related idioms, and technology-related idioms. Each of the said categories consisted of 15 idioms, resulting in a total of 60 multiple-choice items with three possible responses for each. An example of an item under the technology-related category would

5 All of the idioms were first researched for their digital presence, with the initial phase primarily relying on the frequency of occurrences in online search engines and the utilization of online dictionaries like Cambridge Dictionary and its SMART Vocabulary tool. The subsequent phase involved a reassessment of presence to verify their existence in the English Web 2021 corpus (enTenTen). Attaining a balance across idiom categories in this aspect proved challenging, but it is crucial to highlight that the test included idioms with varying frequencies within their respective categories, as was intended.

6 As part of their studies, the students engage in compulsory EFL classes in their first year of study (both semesters), where the curriculum centres on comprehensive grammar exploration, complemented by reading, writing, and conversational exercises designed to enhance their lexical proficiency – especially in relation to their fields of interest (early childhood, education, parenting, etc.).

be the idiom *on the same wavelength*, with three options that the students had to choose from: (a) *when the distance between the waves is consistent during the storm on the sea* (plausible literal interpretation), (b) *thinking in the same way as someone else* (correct non-literal interpretation), and (c) *when two people share similar appearance* (non-literal interpretation). When constructing the instrument, we paid attention that one option always included one of the words that make up the idiom phrase, thus creating an approximation of either literal or semi-literal incorrect explanations of the item in question. The second incorrect choice was envisioned as one that might conceptually resonate with the idiom in question, i.e., typically representing a non-literal interpretation anchored in our own deliberately inaccurate visualisation of the said idiom.

Given that the focus of this research was on informal learning and its effects on the acquisition of idioms, we had to come up with variables that would adequately measure their exposure to English content outside of the formal education context. To achieve this, we asked the students to give an estimation of how much time they spend enjoying the content in the English language on the media such as TV, YouTube, videogames, etc. For instance, they were asked to estimate how frequently they watch English or American movies (possible answers ranging from *Never* to *Very often*), or how much time they spend on social networks a day (possible answers ranging from *Never* to *More than 2 hours a day*). Although these answers, due to obvious ethical and methodological restrictions, represent students' own estimations rather than completely objective measures of time spent using various platforms, they still offer valuable insights into the relevance of exposure to English in informal settings, and, as the analysis reveals, provide invaluable predictive power when it comes to the development of English lexicon.

4. Results

This chapter delves into a comprehensive analysis of various facets of data derived from the EIT, exploring overall scores to reveal performance trends among students. We also outline the individual test examples, illuminating nuanced variations in idiom comprehension, as well as the impact of informal learning on English idiom acquisition.

4.1. Overall EIT scores

Given that most of the scores on the test gather in the middle and the distribution of results is rather normal (see Figure 1), this leads us to assume that the test was well designed and that it managed to capture various levels of knowledge when it comes to the studied categories of idioms. The student with the lowest score on the test had achieved 18 points out of the possible 60 (30%), while the highest score was 58 points in total (97%). The average score was 35.6 (59%), the median value was 38 (63%), and the mode value was 40 (67%).

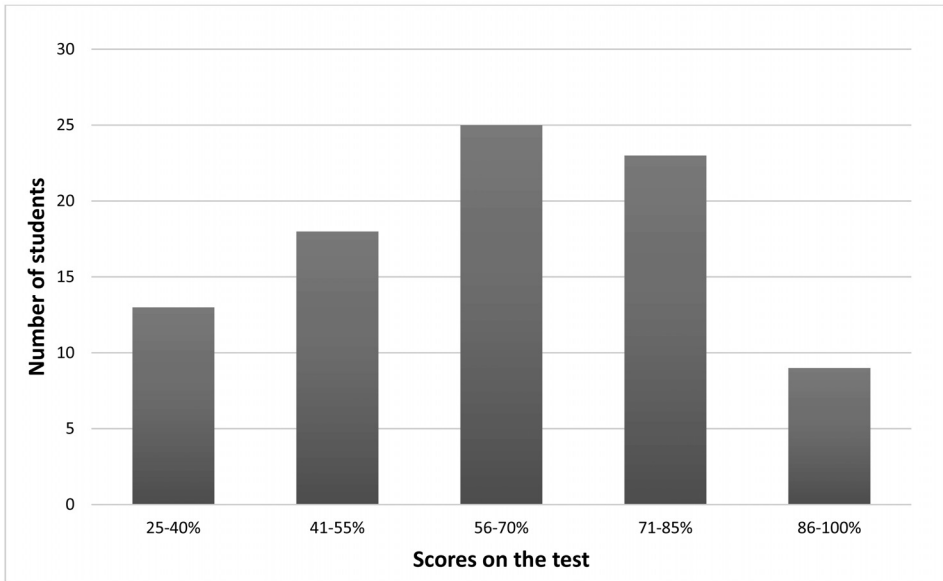


Figure 1. Total scores on the EIT (N=88)

The test covered 4 different categories of idioms separated according to their shared semantic features (see Figure 2), and each of the categories included 15 different examples which needed to be addressed by the students. The students achieved the best results on the education-related idioms (mean = 10.43) and relationships and romance-related idioms⁷ (mean = 10.27), while the average scores in the violence-related (mean = 8.40) and technology-related categories (mean = 8.44) were somewhat lower. In other words, out of the 15 examples included in each of the categories on the English Idiom Test, students chose the correct option on the multiple choice items in two examples less on average when it comes to violence-related and technology-related categories of idioms.

The reason why students tend to perform better on some categories of idioms as opposed to others is probably neither singular in nature, nor can it be completely deduced from the research data and the character of the sample. Nevertheless, there are several factors that may have skewed the results in favour of the categories such as education- and romance-related idioms. Considering that the sample consisted of students studying teacher and preschool teacher education studies, it is not surprising that they achieved better scores in the area related to their professional field of interest. This may be related to both their interests, as well as the materials covered during EFL lectures and courses they attended.

⁷ Hereafter referred to as romance-related idioms.

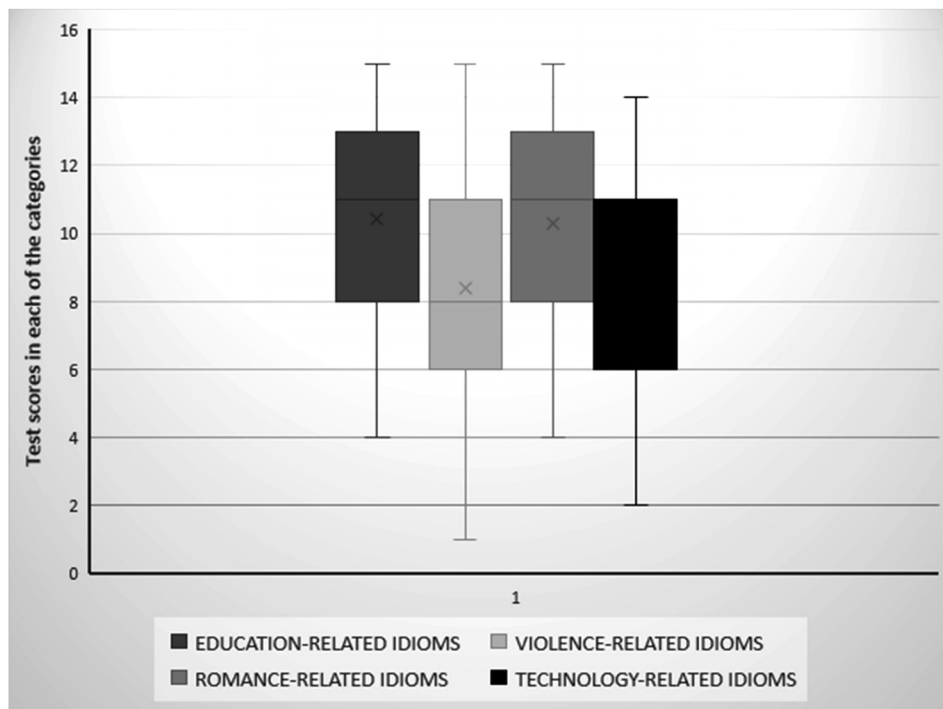


Figure 2. Scores on the test depending on the idioms' respective thematic categories (N=88)

The inclusion of these thematic categories was driven by the likelihood of students being exposed to them in both formal and informal settings (either in classroom or elsewhere through media), and the category of education-related idioms, which the participants may have encountered during their university studies, was not the clear 'winner' results-wise. In other words, although students had lower scores in two out of three categories ascribed to informal English exposure, they scored equally well on romance-related idioms, which were selected precisely because of their prevalent representation in all forms of media. Nonetheless, the question remains whether this 'prevalence' is sufficient to account for the differences found in the test scores, that is, the overarching themes of violence and technology were selected for this research purposes because of their prevalence in everyday media discourse (see Section 3.2). One of the reasons for the lower scores in these two categories might be related to the type of content the students who participated in the research were exposed to, with gender potentially affecting the content and platforms enjoyed during free time. For example, we might assume that violence- and technology-related jargon might be more prevalent in video-games, which the male population is more frequently exposed to (see Gentile et al. 2011 and 2014; Barandiarán et al. 2019; Oflu and Yalcin 2019; Macur and Pontes 2021; Kaplan et al. 2022, and others). Given that all our participants were women, it is possible that the exposure to violence- and technology-related idioms was less

pronounced than it otherwise would have been in a sample that included both genders and that this may have impacted the results to favour the other two categories.

Other possible reasons for differences in scores regarding respective categories might simply concern the way the test was compiled and organized. Although we strived to achieve some equilibrium in difficulty across the targeted categories, it is possible that some categories contained examples of lower complexity in comparison to others, or that the answers provided in multiple choice questions prompted correct responses more frequently in some categories. Given that this questionnaire was administered only on this particular occasion, in order to eliminate alternative reasons, further tests would be necessary to confirm that the theme-related differences in scores were not a consequence of the example-selection process during test design (i.e., disparity in the 'difficulty' of questions between categories), but were instead influenced by the characteristics of the target sample (i.e., participants' sociodemographic data, interests, abilities, etc.).

4.2. Item analysis

Before continuing with the analysis of scores depending on the idioms' belonging to a particular semantic category and the prognostic power of the studied variables, it may be beneficial to first review the test examples which proved to be the easiest or most difficult for students.

The questions where the students mostly provided incorrect answers were idioms *hired gun*, *getting off the grid* and *lightyears ahead* (see Table 1). The incorrect answers chosen most frequently were highly indicative of the conceptual nature of idioms, and the way in which foreign language learners tend to think about them. For instance, the available answers for *the hired gun* were the following definitions: (1) 'the feeling of anger and rage', (2) 'a gun that was used in a gunfight' and (3) 'a hired bodyguard, mercenary, or assassin'. Only 17% of the students opted for the correct third option, while the majority (74%) opted for the feeling of anger and rage. Clearly, all three options are related to violence or violent behaviour in one way or another, but the fact that three quarters of students chose the first answer despite being the wrong one, tells us that they might share a conceptual bias towards certain explanations. In the real world, a gun represents an object waiting to fire a bullet, and as such, it may evoke the mental imagery of anger building up inside of a person waiting to explode. The idiom *getting off the grid* is equally interesting for the same reasons. Most of the students, in this case, opted for the answer 'losing your mind over something that you think is important instead of the correct not connected to any of the main utilities (such as electricity, water, etc.)'. What is more surprising is that this idiom is relatively transparent in terms of meaning, i.e., it is less idiomatic than many others used in the test considering that 'grid' is a term used to denote both electricity and water supply schemes (e.g., electrical grid, water grid). Surely, part of the reason is that the term 'grid' in this context might not be familiar to non-native students of education studies, but it is nonetheless surpris-

ing to see such consensus on the incorrect answer in this case. If students predominantly choose the wrong option in some instances, it suggests that the bias towards the wrong answer is a result of something extraneous to the knowledge of the idiomatic expression, i.e., it most probably reflects the image described by the answer in question.

Idiom	Answers	Solved by
<i>Lightyears ahead</i>	an extremely long time between now and some past or future moment in time ☒	59%
	when you're standing ahead of a person in a queue ☒	15%
	much more advanced than others ☑	26%
<i>Hired gun</i>	the feeling of anger and rage ☒	74%
	gun that was used in a gunfight ☒	9%
	a hired bodyguard, mercenary, or assassin ☑	17%
<i>Getting off the grid</i>	losing your mind over something that you think is important ☒	70%
	getting out of the dense traffic on a highway or a freeway ☒	11%
	not connected to any of the main utilities (such as electricity, water, etc.) ☑	18%

Table 1. Individual examples incorrectly solved by the majority of students (N=88)

When it comes to the question regarding the definition of the idiom *lightyears ahead*, the available choices were the following: (1) 'an extremely long time between now and some past or future moment in time', (2) 'when you're standing ahead of a person in a queue' and (3) 'much more advanced than others'. In this case, most students chose the first option (59%), while only 26% of them chose 'much more advanced than others'. Here, given that the term 'year' tends to be associated with the narrow meaning of time itself, the students may have been lexically motivated to choose the first answer. What is more interesting, in all three of the most difficult examples, students rarely chose the option which contained one of the words actually used within the idiom itself; when compiling the test, in order to explore students' biases towards some choices, one of the strategies was to include a word that constitutes a part of the idiom in just one of the answers (in these cases, the words were 'gun', 'getting' and 'ahead'). Again, this may suggest how little the students are motivated by the actual words themselves as opposed to conceptualizations of the expression as a whole in their processing of idioms, but such a conclusion requires a more sensitive and comprehensive analysis of the test results, which is beyond the scope of this paper.

At the same time, the examples with the most correct answers on the test fall into the category of romance-related idioms (*falling head over heels in love*), edu-

cation-related idioms (*hit the books* and *cover a lot of ground*) and violence-related idioms (*come to blows* and *beat someone black and blue*). Notably, 88% of the students accurately interpreted the phrase *hit the books* as ‘studying intensely’, while 86% accurately understood *cover a lot of ground* to mean ‘reviewing a substantial amount of information or discussing various topics’. Furthermore, 89% successfully grasped the meaning of *falling head over heels in love* as ‘experiencing deep, sudden, and absolute love for someone’. Additionally, 88% correctly identified *come to blows* as referring to a situation ‘where two people start to fight’, and 85% of the participants correctly interpreted *Beat someone black and blue* as the act of ‘hitting someone repeatedly until they are badly bruised’. Aside from the students’ competence and information sources in terms of the English lexicon, the fact that three out of four possible categories contained examples with the highest scores additionally indicated a well-balanced nature of the test design.

Similarly to the discussion on their lowest example-related scores, the role of thematic background in students’ understanding of the idioms explored in this study seems better suited for explanations of their total scores with respect to categories observed (see Section 4.1) rather than individual examples in the test. Other possible explanations for individual items which should not be disregarded include the frequency of particular idioms in the students’ immediate language environment, the level of idiomaticity, students’ shared concept-based associations, the influence of L1, etc.

4.3. The effect of informal learning on the acquisition of English idioms

The correlation analysis showed a statistically significant correlation⁸ between the total scores on the English Idiom Test and the independent variables as follows: (1) time spent watching American or English TV shows and movies correlated well with the overall result ($\rho = .31$), as did the time spent on foreign content channels on YouTube ($\rho = .28$) and time spent playing video games ($\rho = .27$); (2) moderate to high correlation with the overall result was observed with the grades achieved in English during high school ($\rho = .53$), the scores achieved on the exam in the introductory English course at the first year of their study ($\rho = .41$), and the frequency of listening to American/English music ($\rho = .61$).

To gain better insight into the results, we conducted a hierarchical regression analysis on the observed data (see Table 2). The analysis revealed an extremely high total predictive value (proportion of variance explained) of the observed variables for this type of research ($R^2 = .61$); by far the best predictor among the measured variables was the frequency of listening to American/English music ($b^* = .44$), while other variables were slightly weaker, but still statistically significant in their predictive strength. The first step of the hierarchical regression analysis included only

8 The correlation coefficients are interpreted in the context of foreign language acquisition, where the correlation, which might otherwise be considered generally low in other fields of research, is recognized as more consequential than usual.

variables covering the exposure to foreign English content through various types of media, out of which the only significant predictor of the success on the EIT was the exposure frequency to English/American music. In the following step of the hierarchical regression analysis, we included the variables related to success in the formal setting of EFL education (both in secondary school and the first year of university studies), and it revealed all the observed variables as significant predictors except for the variable pertaining to the use of social networks.

Average time spent on:	R= 0.78233867; R ² = 0.61205380; <i>p</i> <.00000	
	<i>b</i> *	<i>p</i>
English/American Movies/TV shows	-.206782	.022635
Foreign content on Youtube	.178070	.042320
Videogames	.222373	.004508
English/American Music	.442049	.000016
Social networks	-.135743	.085131
Average high school grades in English	.342300	.000091
Scores on the university-level English test	.296877	.000458

Table 2. Hierarchical regression analysis – predictors of the EIT scores

Furthermore, the second step of the regression analysis revealed the exposure frequency to English/American movies as a negative predictor of scores on the EIT, i.e., when the ‘movies’ variable interferes with other variables in the regression analysis, it turns out that it does not aid the acquisition of English lexicon whatsoever – in fact, it may even prove to be counterproductive. This is one of the rare cases in which the independent variable positively correlates with the dependent one (the scores on the English Idiom Test), and yet proves as a negative predictor of the same in the regression analysis.

5. Final discussion

The most interesting findings of the study primarily address the impact of informal learning on English idiom acquisition and the potential implications of the results on the understanding of foreign language vocabulary development. When it comes to watching English or TV shows, there are several reasons why the time spent consuming such content might not facilitate the acquisition of English idioms when compared to other variables observed in the research. If the research observed solely exposure to English movies and TV shows, chances are that this would have been wrongly interpreted as having a positive effect on the acquisition of English idioms. However, considering the results of the regression analysis, it

becomes apparent that those who are exposed to English content via other media platforms do not tend to benefit from additionally watching movies and TV shows. In other words, it is possible that these results indicate the time spent watching movies has a positive effect on the acquisition of English idioms only in cases where the participants did not consume foreign content via other media platforms. This is somewhat surprising, especially given that viewing materials in a foreign language content has been confirmed as beneficial for vocabulary in comparison to other competing modes of learning across several studies (cf. Bahrami and Sim 2012; Feng and Webb 2020; Dang et al. 2023). On the other hand, in a study similar to ours, on a relatively large sample of 780 Dutch-speaking children, De Wilde et al. (2020) clearly demonstrated that the best predictors for children's language proficiency were the use of social media, gaming, and conversing in English, and not one of the "most regularly investigated" foreign language input which is watching television programmes. The data obtained in our study agrees with some of their observations⁹, with the main facilitators for the acquisition of English idioms (and we could loosely assume that the same goes for the English lexicon) proving to be the times spent listening to music, playing videogames, and watching YouTube; and yet when these are complemented with the time spent watching English movies and TV shows, the latter seems as more of a hindrance to acquisition than a contributor.

There could be a number of reasons for this counterproductivity, such as the fact that movies and TV shows tend to provide subtitles (especially in cases of direct exposure via television where they tend to be in one's native language), which are then 'abused' by people who passively digest the content in question.¹⁰ This is clearly not the case with videogames, music or YouTube, where the consumers are forced to decode whatever they are presented within the language in which it is presented. This doesn't go against a number of studies which demonstrated the greater impact of subtitled movies on vocabulary learning than non-subtitled ones (see Rokni and Ataee 2014; Shamsaddini et al. 2014; Ebrahimi and Bazaee 2016, and others), as it is important to note that these were mostly looking into short-term impact as opposed to the long-term one, and, more importantly, with the language of subtitles being the target (foreign language) one. Moreover, others reported that the best learning effect was achieved through foreign language subtitles, as opposed to those subtitled in learners' native language and non-subtitled ones (see Hayati and Mohmedi 2011; Birulés-Muntané and Soto-Faraco 2016). As this was not the

9 Unlike in our research, their study revealed that, based on the regression analysis of general language proficiency, exposure to English music has a detrimental impact on children's contextual language learning when accounting for the partial effects of other variables (ibid. p. 180).

10 In the context of informal learning, some researchers argued that the success of lexical acquisition is associated directly with the learners' focus on carrying out the tasks. Although exposure to English content via films and music was recognized as very effective for the expansion of vocabulary, solely incidental exposure to a foreign language was interpreted as insufficient (Milton 2008). Such assessments fall beyond the scope of our study but given that questions pertaining to the consummation of English content were conceived as measures of inadvertent exposure, it appears that our data indirectly speaks against such inferences.

focus of our study, the data pertaining to students' movie and TV shows consumption did not include information on whether they were watching them with L1 or L2 subtitles, but in Croatia, movies and TV shows are subtitled in L1 if consumed via regular TV network providers.¹¹ In fact, Sara Brodarić Šegvić (2022) found that watching English–language movies or series with Croatian subtitles on TV did not significantly correlate with language proficiency and even showed a negative correlation with students' EFL competences. Our findings thus seemingly agree with those challenging the utility of consuming content subtitled in one's first language as opposed to others.

In the Croatian context, exposure to English or American music doubtlessly seems to be the best predictor for the understanding of English idioms. Some research has already shown that trained musicians tend to perform better on second language–related tasks, which mostly connects to their ability to both perceive and produce unfamiliar tones (see Gottfried 2007; Zeromskaite 2014). Furthermore, a notable study by Schellenberg (2004) has indicated that music lessons in themselves can have favourable effects on the intelligence quotient, and although these increases need not necessarily be extremely large, they still significantly enhance the general cognitive capacity. Moreover, in their study of the computerized training programs' potential effects on cognitive functions, Moreno et al. (2011) found that short-term music training enhances verbal intelligence. Nevertheless, these claims are still different from ours in many respects. Although our study examines the correlation between exposure to English music and success on the English vocabulary related test, there are significant limitations to what can be inferred from our data. What we do know for sure is that students who listen to English or American music more frequently tend to have a better understanding of English idioms. Naturally, the question is whether this correlation is a consequence of the fact that listening to music tends to facilitate foreign language learning, or whether there is a mediator variable such as intelligence that partly explains this phenomenon. For example, the research by Rentfrow and Gosling (2003) revealed that individuals with high levels of intelligence prefer more complex music because it has an optimal stimulating effect for them, while simpler music tends to be optimal for individuals with lower cognitive abilities. The results of their study were partly corroborated in the Croatian context as well, and it revealed links between personality traits, values, and music preferences (see Reić Ercegovac and Dobrota 2011, Pavlović et al. 2017). On the other hand, a number of studies have identified correlations similar to our findings and compellingly argued that repeated exposure to foreign music significantly contributes to the development of foreign language lexical competence (Toffoli and Sockett 2014; Piri 2018; Pavia et al. 2019, and others). In the Croatian context, Brodarić Šegvić (2022) found statistically significant

11 It is also true that, with the rise in the use of streaming platforms, there is a possibility that students differ with respect to how they enjoy the English content (with L1 or L2 subtitles, or with no subtitles at all). Further studies on the matter would benefit from retrieving this data in the Croatian context.

correlations between students' listening to English music on internet platforms and EFL competence levels, while Cergol Kovačević and Matijević (2015) detected a significant role that the use of music-intended devices played in students' acquisition of both auditory and oratory English language skills. Our interpretation of our study's data is that both factors need to be taken into consideration; the possibility of a mediator variable¹², as well as the fact that music might truly be beneficial for the lexicon, allowing the listeners to remember some formulaic expressions (such as idioms) better with the help of rhythm and intonation.

Aside from the independent variables related to time spent using various media platforms and services, we also included a question asking students whether they own an Instagram or Facebook account (or both). Similarly, to the time spent on social networks, this variable too revealed no difference between the students depending on the type of social network they use in terms of their EIT scores. Ever since social networks started to dominate the public sphere of interpersonal relationships, there has been a lot of debate in terms of their benefits and drawbacks, and the same goes for foreign language learning (see Blattner and Fiori 2009; Lin 2012; Araya Ríos and Espinoza Campos 2014; AbuSa'aleek 2015; Faryadi 2017; Mansor and Rahim 2017; Zourou 2019, and others). Most of them agree on the fact that learners' foreign language skills can benefit from using social networks, but mostly in cases where these strategies are employed on purpose, i.e., when teachers guide and structure language learning activities whilst utilizing the advantages social networks may provide. Although this was not the main concern of our paper, our data might suggest that the indiscriminate and goalless use of social networks does not facilitate foreign language learning at all (or at least the acquisition of idioms). One of the reasons may be that the content on social networks such as Facebook and Instagram can vary from one person to another, and it does not necessarily need to be saturated with foreign content at all. On the other hand, social networks such as Instagram tend to put emphasis on the visual rather than the lingual aspect of the content provided, which in turn does not yield the desired learning response.

As far as formal indicators are concerned, both grades achieved in high school and scores on university-level tests proved to be significant predictors of the students' prowess in determining the meaning of idioms. The results are in line with studies that explored the relationship between formal evaluation and vocabulary knowledge (see Sparks et al. 1998; Tragant and Victori 2012; Roche and Harrington 2013; Skjelde and Coxhead 2020, and others), but it is interesting to observe that the average high school grades achieved in English proved to be a slightly better predictor than the scores achieved on the university-level test, especially in rela-

12 As the reviewers of this paper pointed out, the inferential potential of the type of data obtained is severely limited in this regard. We merely want to suggest that, if there indeed exists a mediator variable such as intelligence or educational level when it comes to music preferences or consumption, especially in relation to foreign or domestic one (cf. Meuleman and Lubbers 2014), further research on the matter might be beneficial in the Croatian context.

tion to how these variables were examined. When it comes to their high school success in English, the students were asked to provide their estimation of what their average grade has been in the form of an ordinal variable (1-5). When it comes to scores achieved on the university-level test, the fact was known to the administrators of the test (the authors of this paper) and it was included in the final database as an interval variable. The fact that these two formal measures proved to be relatively good predictors of success on the EIT is not to be interpreted through the lens of the effect of formal education on the knowledge of English idioms or the acquisition of the English lexicon in general. For this assessment, we would need repeated tests and well-prepared executed lessons targeting the knowledge that is to be acquired. However, the predictive value of the two measures included in the final regression analysis does reveal the capacity of formal education to adequately assess the students' knowledge of the subject matter.

5. Conclusion and further implications

To sum up, the findings of the study primarily shine a light on the relevance of exposure to foreign language content in informal settings in the context of lexical enrichment and foreign language acquisition, as well as on some semantic aspects of the idiom acquisition in terms of their belonging to one of the observed thematic categories; these results can be summarized as follows:

- (1) The students of education studies showed the best understanding of idioms that were thematically related to education or romance and relationships. Part of the reason may lie in the test design (although efforts were made to make the categories equally challenging for respondents, it is difficult to level out the examples according to all aspects such as idiomaticity), part of the reason may be in the sample structure (all of them were female students), and part of the reason may truly be in the semantics of the categories proposed and the students' exposure to them. It is not surprising that the highest scores were achieved in the category which is their future profession and the category which is omnipresent in popular culture and media (education-related idioms and relationships and romance-related idioms).
- (2) The main predictor for the acquisition of English idioms for foreign language learners was the time they spend listening to English or American music. Part of the reason may be the fact that music completely relies on audio in conveying the message and thus moves the focus unto language itself, as opposed to other media which tends to be audio-visual in nature. The second possibility is the existence of the mediator variable which underpins both students' music preferences and EFL competence levels, but this remains beyond the scope of our study.

- (3) The second main predictors for the acquisition of English idioms were the students' average high school grades in English and their scores on the first-year university-level English test; although this is not a direct measure of the effectiveness of formal education, it certainly reveals a capacity of formal education to adequately assess the learners' foreign language competence. To capture the effects of formal EFL education, it might be beneficial to conduct research that would test the scores on the EIT before and after the students have covered the unit of idioms in their classroom settings.
- (4) The time spent watching English movies or TV shows was shown to be counterproductive for the acquisition of English idioms when put into the regression analysis, despite the initial positive correlation between the variable and the EIT scores. It is possible that these results indicate that the time spent watching movies has a positive effect on the acquisition of English idioms only in cases where the participants do not consume foreign content via other media platforms, whereas those who consume English content via other media platforms do not tend to benefit from it at all.
- (5) The findings of the study also indicated that the use of social networks does not facilitate the acquisition of English idioms at all. One of the reasons may be that the content on social networks such as Facebook and Instagram need not necessarily be saturated with foreign content at all. Moreover, social networks such as Instagram tend to put emphasis on visual content, and the quantity of foreign language input could be rather low, especially when compared to other media which rely on storytelling and lingual elements in general.

The research questions addressed by this study concerned the semantic background of idioms, the processing background of idioms and the role of media-driven learning-facilitators in the acquisition of idioms. The analysis of the students' responses did reveal some significant differences in view of thematic categories that the idioms belonged to, but while we did provide some estimates on the potential causes of such results, any conclusive reasons for such results have to be further investigated. A potential limitation of the study is that all participants were women, which could have influenced the outcomes on the EIT. The lower scores in certain thematic categories of idioms may be attributed to the content exposure of the female participants during their free time, with gender potentially shaping the type of content and platforms they engage with. The answer to the second research question was unambiguous and the total predictive value of informal modes of learning addressed in this research was surprisingly high. The results are in line with previous research suggesting the benefits of incidental language exposure when it comes to foreign language vocabulary development (see Section 2). In light of our data and its limits, we suggest further research on foreign language idiom acquisition to employ repeated measures design which would control the partici-

pant groups for strategically implemented media-driven instruction directly or indirectly referencing figurative vocabulary targeted for learning.

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Razvoj vokabulara stranog jezika: neformalno učenje u kontekstu izloženosti različitim oblicima medija

U ovom radu su predstavljeni rezultati istraživanja utjecaja neformalnog učenja na usvajanje engleskih frazema, polazeći od pretpostavke da povezanost idioma s leksikonom čini usvajanje idioma manje povezanim s formalnim podučavanjem engleskog kao stranog jezika, koje se obično usredotočuje na podučavanje gramatike. Primarni cilj ovog istraživanja bio je procijeniti učinke neformalnog učenja na usvajanje engleskih idioma s obzirom na svakodnevnu izloženost engleskom jeziku putem različitih medija. Istraživanje je provedeno na studentima razredne nastave i predškolskog odgoja (N=88; Sveučilište u Zadru), a uključivalo je kratki upitnik o njihovim navikama gledanja filmova, igranja videoigara, korištenja društvenih mreža itd., kao i test sastavljen od 60 pitanja višestrukog izbora s primjerima različitih engleskih frazema. Hijerarhijska regresijska analiza otkrila je da je najbolji prediktor poznavanja engleskih idioma učestalost slušanja engleske i američke glazbe, dok su ostali značajni prediktori bili učestalost gledanja YouTube videa s stranim sadržajem, učestalost igranja videoigara, ocjene postignute na nastavi engleskog jezika tijekom srednje škole i rezultati na engleskim jezičnim testovima provedenim na kraju prvog semestra na Sveučilištu; ukupna prediktivna vrijednost ispitivanih varijabli bila je iznenađujuće visoka ($R^2=0.612$). Osim rasprave o implikacijama ovih rezultata, rad također razmatra činjenicu da se učestalost gledanja engleskih i američkih filmova/TV emisija pokazala kao negativan prediktor unatoč pozitivnoj korelaciji s ukupnim rezultatima na testu, kao i činjenicu da učestalost korištenja društvenih mreža nije imala nikakav utjecaj na usvajanje engleskih idioma.

Keywords: English idioms, informal learning, vocabulary development, learners of English as a foreign language (EFL learners), media-driven acquisition

Ključne riječi: engleski idiomi, neformalno učenje, razvoj vokabulara, učenici engleskog kao stranog jezika, usvajanje putem medija