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# Crowdsourcing for language learning in Turkey, Bosnia and Herzegovina, Republic of North Macedonia and Poland

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**Abstract**

Online crowdsourcing sites/platforms have become popular in recent years, and the first aim of this study is to uncover what crowdsourcing resources language learners in Turkey, Bosnia and Herzegovina, the Republic of North Macedonia and Poland know about and use. The other two goals of the study are to uncover what crowdsourcing games or websites the students in the studied countries utilise as in- or/and outside-class activities, how enjoyable they find them and whether or not students contribute to the further development of those crowdsourcing resources. The data for the study were collected using a cross-culturally appropriate online questionnaire in English explicitly designed for this study. The appropriateness of the questionnaire was tested prior to its distributions in the pilot phase and comprised two parts. Section one gathered information about the employment of the crowdsourcing sites, tools, and games, while section two helped compile a detailed picture of the participants' background. The data were analysed both qualitatively and quantitively, keeping in mind country and context-specific variables. The results show that there are both intriguing similarities and differences in the ways informants in the examined countries perceive, employ, evaluate and contribute to the available crowdsourcing resources when learning foreign languages. Therefore, the findings might provide insights for language teachers planning to incorporate crowdsourcing sites and crowdsourced activities in their classes as well as for platform/game creators aiming to develop resources with cross-cultural usefulness and validity.

***Keywords:*** crowdsourcing sites/tools/games, in- and outside class foreign language learning, contributing to crowdsourcing tools, Turkey, Bosnia and Herzegovina, Republic of North Macedonia, Poland

## Introduction

The term 'crowdsourcing' was coined by Jeff Howe (2006, p. 2) in an article published in *Wired Magazine*, where he was arguing that

> *"Technological advances in everything from product design software to digital video cameras are breaking down the cost barriers that once separated amateurs from professionals. Hobbyists, parttimers, and dabblers suddenly have a market for their efforts, as smart companies in industries as disparate as pharmaceuticals and television discover ways to tap the latent talent of the crowd. The labor isn't always free, but it costs a lot less than paying traditional employees. It's not outsourcing; it's crowdsourcing."*

After the introduction of the term, crowdsourcing has been applied to an array of different activities and with different purposes. Still, they all have one common feature, i.e., to be successful, they all need crowd contribution. The required contribution might have different forms and shapes as crowdsourcing can be employed in various areas (e.g., art, business, medicine, tourism, translation). One field where crowdsourcing has been used more frequently recently is education. It has been shown that with crowdsourcing practices, pioneering learning and teaching resources (Farasat et al., 2017), authentic practice activities (Chen & Luo, 2014; Hui et al., 2014), as well as tailor-made flexible support for the students (Goel, 2017; Shaikh et al., 2017; Weld et al. 2012;), can be created. Since conventional education, where students' experiences were limited to textbooks or other teaching materials available in their local contexts, is now challenged by the developments in technology and diversity in learning needs (Çebi, 2018; Solemon et al., 2013; Wang, 2016), every year a more significant number of competitive educational organisations use the "wisdom of the crowd" in various ways to support innovative education.

One area in the field of education where the use of crowdsourcing is still poorly studied, however, is language learning/teaching. In particular, the number of studies eliciting language learners' views about crowdsourcing platforms, how and where they make use of them is minimal. As far as the authors are aware, there are only three studies that particularly focus on language learners' views of crowdsourcing platforms (Gajek, 2020; Hatipoğlu et al., 2020; Mospan, 2018). This is an important gap in the language learning field since for a new e-learning resource to become successful, it has to be accepted by the end-users (i.e., students) (Rafiee & Abbasian-Naghneh, 2019). Research shows that there are "complex relationships between the perceived usefulness, perceived ease of use, e-learning motivation, online communication self-efficacy and language learners' acceptance and readiness of e-learning" (Rafiee & Abbasian-Naghneh, 2019, p. 1). That is, uncovering what end product users think and how they employ crowdsourcing materials is essential for both platform creators as well as language teachers since such information will help both groups create and recommend resources benefiting students.

Aiming to contribute to this area of research, the current study seeks to answer the following research questions:

(1) What crowdsourcing resources students in Turkey (TUR), Bosnia and Herzegovina (B&H), Republic of North Macedonia (RNM), and Poland (POL) know about and make use of to learn foreign languages?

(2) What crowdsourcing games or websites are used as a class activity and how enjoyable they are according to language learners in TUR, B&H, RNM and POL?

(3) Have language learners in TUR, B&H, RNM and POL contributed to the development of available language learning/teaching crowdsourcing sites or games? If, 'Yes', what kind of content have they added?

## Literature review

Crowdsourcing, the term introduced by Jeff Howe (Howe 2009, p. 6), can be applied to a wide variety of different purposes that share one common feature, i.e. they all depend on crowd contributions. In Howe's (2009, p. 280ff) work, four primary categories of crowdsourcing applications are listed and defined: (i) crowd wisdom or collective intelligence; (ii) crowd creation or user-generated content; (iii) crowd voting; and (iv) crowdfunding. The first category, *crowd wisdom*, relies on the fact that a crowd's knowledge is greater than an individual's knowledge. However, creating an appropriate environment where the crowd will present and share their knowledge is essential. The *crowd creation* property (i.e., the second category on Howe's list) states that the crowd should vary in their variety in the field in question though the crowd members do not have to interrelate with each other. *Crowd voting* relies on the crowd's decisions to systematise vast amounts of information, while the fourth category (i.e., *crowdfunding*) is the practice of funding a project by raising small amounts of money from a considerable number of people. All four categories are interrelated and create a complete picture of crowdsourcing.

There are two major types of crowdsourcing, explicit and implicit. Implicit crowdsourcing is a process in which the participants are unaware of their participation in the activity. Therefore, this type of crowdsourcing is referred to as involuntary crowdsourcing or passive crowdsourcing[1]. The most common example is CAPTCHA[2] which determines whether the user is a human being or a spam robot. It has shown that our small contributions can be beneficial for humankind. The information collected by CAPTCHA has found its application in the digitisation of books, creating maps and other projects based on image recognition. An example of an implicit crowdsourcing tool for language learning is Duolingo, a free language-learning platform that offers a free language learning tool that collects the content generated by language learners, usually translations of simple structures. The goal is to improve the quality of the offered language content.

The term explicit crowdsourcing was coined quite recently in the European Network for Combining Language Learning with Crowdsourcing Techniques (enetCollect)[3]. It is used to describe activities in which users willingly participate and contribute to the creation of different materials that a large number of people can later use. Wikipedia is most probably the best example of explicit crowdsourcing. Unlike implicit crowdsourcing, the explicit one requires a careful design or wording of contribution and familiarity with intellectual property rights.

Crowdsourcing has its application in education[4], where it can be defined as "a type of an (online) activity in which an educator or an educational organisation proposes to a group of individuals via a flexible open call to directly help learning or teaching" (Jiang et al. 2018, p. 3). According to Jiang et al. (2018), crowdsourcing can be beneficial for education in four

[1] Cf. Andro (2018)

[2] CAPTCHA stands for Completely Automated Public Turing test to tell Computers and Humans Apart

[3] http://enetcollect.eurac.edu

[4] There are only a few studies that discuss the use of crowdsourcing in the context of language education. Pemberton et al. (2010) worked on a mobile and web-based information system developed for international students to enrich their knowledge of English. York and Stiller (2013) discuss learners' digital literacy on social media. Odo (2016) researches the possibilities of combining traditional ELT teaching materials and various online resources. Gunter et al. (2016) discuss the use of applications such as Duolingo and Busuu in one classroom experiment. Arhar et al (2020) present a cross-European survey on teachers and crowdsourcing that shows the present state of language teachers' awareness of the value of crowdsourcing both for language teaching and learning.

different ways: "creating educational contents (Resources), providing practical experience (Activities), exchanging complementary knowledge (Support), and augmenting abundant feedbacks (Evaluation)" (p. 4).

The presence of technology in ELT classrooms has become inevitable, and many studies discuss the application of computer-assisted language learning (CALL), and mobile assisted language learning (MALL) in classrooms. Çebi (2018, p 150), in his paper on teachers' perceptions toward technology integration into the language teaching practices in fifty-one countries, claims that "technology, as a tool, has broadened the scope of language teaching and learning". He further claims that the use of technology contributes to the learner's autonomy, which is an essential factor in their development. Delibegović Džanić and Hasanspahić (2020, p. 42) researched CALL in English language classrooms in Bosnia and Herzegovina. They argue that both teachers and students generally see information technology as a motivating factor in the English language learning process, stating that it often facilitates the teaching process. However, for a teacher or student who lacks sufficient computer literacy or does not have a well-defined goal and necessary skills of modern information technology, it can also be a difficulty and an aggravating factor. Often, at teacher training seminars, teachers immediately react, saying that they do not have the basic resources and working conditions because schools in Bosnia and Herzegovina are very poorly equipped with technological aids. However, most students have computers at home or smartphones that can be used in class, which is indicative of the high percentage of penetration of this type of digital technology among the population in general and the young population in particular (Hatipoğlu et al., 2020; Miloshevska et al., in press). This means that performing CALL activities through homework and outside the classroom can prolong work with students and engagement of students, offer them an adequate alternative, and at least partially compensate for the lack of technological resources in our schools. In this way, CALL would be nicely combined with traditional methods and teaching aids and easily applied in warm-ups or follow-up activities. Chen et al. (2020) also highlight the beneficial impact of mobile devices in the language learning process. Their study on the effects of using mobile devices on language learning points out that applying MALL "in outdoor and unrestricted settings tend to achieve larger effects than in classroom settings" (p. 1783).

Although most learners feel more comfortable in the environment when the teacher overtly or covertly guides them through the lesson, the requirements of the era in which we live force all of us to become more independent and autonomous in the process of acquiring new skills. The turn towards learners' autonomy can be beneficial both for teachers and students. For example, a language teacher may ask their students to find examples of particular grammar structures that can later be recycled on different practice activities or to find examples of visually represented idiomatic expressions that might help their peers master the meaning and use of these structures. EFL teachers often create a pool of lesson plans that they can easily exchange and recycle, which is one instance of crowdsourcing.

Crowdsourcing activities can find their place in EFL classrooms both as in-class or homework activities where crowdsourcing is combined with CALL, as students might access different online resources such as YouTube videos, online language learning platforms and communities, etc.

Incorporating crowdsourced materials in ELT classes requires careful planning and detailed instructions for accessing online resources as a certain level of computer and media literacy is required both from teachers and students. Jiang et al. (2018, p. 10) also suggest that "crowdsourcing educational contents collaboratively among online crowd requires time and

effort in coordinating the writing and review process to ensure that the end product is beneficial to learners and maintained moving forward (Skaržauskaitė 2012; Weld et al. 2012)".

Although this process requires a great deal of enthusiasm both from teachers and learners, it is believed that the benefits certainly outweigh some potentially negative aspects. Skaržauskaitė (2012, p. 74) concludes that "crowdsourcing gives students real world experience in coming up with creative solutions to important problems. Students can apply classroom knowledge to real world problems and learn the ins and outs of their chosen fields from a practical perspective."

## Methodology

### Data Collection

The data were collected using a questionnaire specifically designed for this study. To ensure parallelism among the collected corpora in TUR, B&H, RNM and POL, an effort was made to create a cross-culturally appropriate questionnaire (i.e., a data-gathering tool that is transferable across cultures, settings and sites. It is also culture bias-free and comprehensible to participants with different language and cultural backgrounds).

The questionnaire had two sections: Section A and Section B. Section A elicited information related to the use of crowdsourcing tools and practices of the participants, while the latter part gathered information pertaining to the participants' background. There were 11 items in Section A, and nine of them were checkbox questions allowing participants to select multiple answers from a list of choices. This section also included one Likers scale question asking participants to rate the crowdsourcing platforms they used from "Very enjoyable" (5) to "Not enjoyable at all" (1) and "I have not used it" (0), and one open-ended question where they were asked to discuss how they contributed to various crowdsourcing platforms.

Section B of the questionnaire included six questions, four of which were checkbox, and two were open-ended items. Section B aimed to collect detailed background information related to the participants in the four countries.

### Data Analysis

Both quantitative and qualitative data were collected in the current study. Therefore, suitable techniques were employed to classify and evaluate the different data sets. The compiled quantitative data were analysed using SPSS, and various descriptive and parametric tests were utilised to identify the relationship between the different variables examined in the study. The qualitative data gathered via open-ended questions were analysed thematically, considering country and context-specific variables.

### Participants

The participants in this study were 211 university students from TUR (N=43, 20.4%), B&H (N=69, 32.7%), RNM (N=42, 19.4%) and POL (N=58, 27.5%) (see Table 1). Two-thirds (N=142, 67%) of them were females and one-third males (N=69; 33%). Participants from TUR, B&H and POL were pre-service language teachers, while the participants from RNM were future information and communication engineers and computer science engineers learning English for specific purposes. The bigger number of female participants reflected the gender distribution at the Faculties of Education in TUR, B&H and POL (Can Daşkın & Hatipoğlu, 2019). The age range of the informants was 18-39, but 98.1% of them were either in Age Group

1 (Range: 18-21, N=109, 51.7%) or Age Group 2 (Range: 22-25, N=98, 46.4%). Only 1.9% of the participants were in Age Group 3 (Range: 26-39; N=4).

**Table 1: Participants**

| | TUR | B&H | RNM | POL | ALL |
|---|---|---|---|---|---|
| **Total** | 43 (20.4%) | 69 (32.7%) | 41 (19.4%) | 58 (27.5%) | 211 |
| **Males (M)** | 12 (27.9%) | 17 (24,6%) | 27 (65.9%) | 12 (20.7%) | 69 (33%) |
| **Females (F)** | 31 (72,1%) | 52 (75,4%) | 14 (34.1%) | 45(79.3%) | 142 (67%) |
| **Age range** | 18-25 | 18-39 | 18-24 | 18-38 | 18-39 |
| Age GR 1 | 18-21: 16 (37.2%) | 18-21: 42 (60,1%) | 18-21: 39 (95.1%) | 18-21: 12 (22.4%) | |
| Age GR2 | 22-25: 27 (62.8%) | 22-25 24 (34.8%) | 22-25: 1 (2.4%) | 22-25: 46 (75.9%) | |
| Age GR3 | | 30-39: 3 (4.3%) | | 35-38: 1 (1.7%) | |

To uncover which groups of language learners use which types of crowdsourcing tools, the participants were asked to self-evaluate their language proficiency according to CEFR levels (Council of Europe, 2001). As can be seen in Table 2, overall, 65.4% of the participants classified themselves as *Proficient Users* (C1=79, 37.4% or C2=59, 28%), 18.4% stated that they were *Independent Users* (B1=6, 2.5% or B2=33, 15.6%) while only seven students (A1=4, 1.9%; A2=3, 1.3%) and only from one country (i.e., RNM) placed themselves in the *Basic User* level. So, the preferences and views that we are discussing in this paper are relevant more to language learners with more advanced skills in the target languages.

**Table 2: Self-reported level of proficiency of the participants**

| | TUR | | POL | | RNM | | B&H | | ALL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **A1** | | | | | 4 | **9.8** | | | 4 | **1.9** |
| **A2** | | | | | 3 | **7.3** | | | 3 | **1.4** |
| **B1** | | | | | 4 | **9.8** | 2 | **2.9** | 6 | **2.8** |
| **B2** | 3 | **7.0** | 5 | **8.6** | 10 | **24.4** | 15 | **21.7** | 33 | **15.6** |
| **C1** | 8 | **18.6** | 31 | **53.4** | 13 | **31.7** | 27 | **39.1** | 79 | **37.4** |
| **C2** | 23 | **53.5** | 12 | **20.7** | 5 | **12.2** | 19 | **27.5** | 59 | **28.0** |
| **No answer** | 9 | **20.9** | 10 | **17.2** | 2 | **4.9** | 6 | **8.7** | 27 | **12.8** |
| **All** | 43 | **100** | 58 | **100** | 41 | **100** | 69 | **100.0** | 211 | **100.0** |

## Results and discussions

### *RQ1: What crowdsourcing resources students in Turkey (TUR), Bosnia and Herzegovina (B&H), the Republic of North Macedonia (RNM), and Poland (POL) know about and make use of to learn foreign languages?*

Crowdsourcing is a pretty new phenomenon, and its use is not that widespread in educational contexts (Jiang et al., 2018). Therefore, the current paper's first aim was to uncover which crowdsourcing platforms the participants in the studied four countries were using. The

findings of the study showed that while some of the platforms were 'more universal/internationally used' (i.e., employed in all of the studied countries), others were more 'country specific' (see Table 3).

In the questionnaire, following recent research of the popular language-learning platforms (Nicolas, 2021), students were provided with a list of the following ten crowdsourcing sites: *Busuu, Duolingo, Flocabulary, Kahoot, Khan Academy, Memrise, Speakandimprove.com, Storybird, Wikipedia, Writeandimprove.com*. The participants were also instructed to add the platforms that were not mentioned in the list, but they had used to learn languages. This proved to be a good strategy as students added sixteen crowdsourcing platforms to the initial list. When the lists of the crowdsourcing sites employed by students were compared, it was found that participants from POL (N=14), B&H (N=13) and TUR (N=13) had used almost an equal number of sites to learn languages while the RNM group (N=8) had a narrower list. Scrutiny of the "None of them" answers revealed that 14.5% of the B&H and 9.8% of RNM had never used any crowdsourcing platforms to learn languages, while all of the participants from TUR and POL had used at least one such source to learn a foreign language.

Among the ten crowdsourcing platforms listed by the researchers, only six (i.e., *Wikipedia, Kahoot, Duolingo, Khan Academy, Memrise, Busuu)* were employed by students in all of the studied countries while the remaining four (i.e., *Storybird, Flocabulary, Speakandimprove.com, Writeandimprove.com)* were used only in some of the countries and by a much smaller number of participants. There was also a significant variation in the number of students who had used the crowdsourcing platforms for language learning purposes. Only *Wikipedia, Kahoot* and *Duolingo* had been used by more than half of the students.

*Wikipedia*, the overwhelmingly favourite crowdsourcing tool in the examined countries, was used by 74.9% of all participants to learn languages. On country-specific bases it was most popular in POL (89.7%) and TUR (86%) where it was used by a statistically significantly bigger number of students than in RNM (POL-RNM, $z = 2.593$, $p < .0095$, two-tailed; TUR-RNM, $z = 1.881$, $p < .006$, two-tailed) and B&H (POL-B&H, $z = 3.981$, $p < .0002$, two-tailed; TUR-B&H, $z = 3.118$, $p < .0018$, two-tailed). According to Bergvall-Kåreborn and Howcroft (2014, p. 215), for a crowdsourcing platform to become popular, it has to tap into concepts such as "collaborative consumption, community building, the sharing economy and social enterprise". It looks as if *Wikipedia* fulfils all these expectations. It is available under a free licence on the web. That is, all internet users can access it when needed (i.e., collaborative consumption). It is also the largest (there are more than 4.5 million articles) and one of the oldest collaboratively edited sources of encyclopaedic knowledge (Lee & Seo, 2016; Völker, 2006). By allowing even casual users to participate in its creation (i.e., community building), Wikipedia has stimulated and motivated the crowd around the world to share their wisdom with each other (Yang & Lai, 2010) in such a manner that an almost "omni including source" has been created. What is more, the crowd relies on the material posted in Wikipedia since contributing members not only detect but also have the right to correct each other (Stvilia et al., 2008) and according to Viegas et al. (2007), group members readily coordinate and regulate the knowledge shared on the platform.

**Table 3: Crowdsourcing sites/tools used to learn foreign languages**

| | | TUR | | B&H | | RNM | | POL | | ALL | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Crowdsourcing tools** | | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| 1 | Wikipedia | **37** | **86** | **40** | **58.0** | **29** | **70.7** | **52** | **89.7** | **158** | **74.9** |
| 2 | Kahoot | **36** | **83.7** | **31** | **44.9** | **12** | **29.3** | **54** | **93.1** | **133** | **63.0** |
| 3 | Duolingo | **23** | **53.5** | **40** | **58.0** | **20** | **48.8** | **47** | **81.0** | **130** | **61.6** |
| 4 | Khan Academy | **9** | **20.9** | **8** | **11.6** | **23** | **56.1** | **9** | **15.5** | **49** | **23.2** |
| 5 | Memrise | **10** | **23.3** | **7** | **10.1** | **3** | **7.3** | **23** | **39.7** | **43** | **20.4** |
| 6 | Busuu | **9** | **20.9** | **3** | **4.3** | **2** | **4.9** | **7** | **12.1** | **21** | **10.0** |
| 7 | Quizlet | | | | | | | **19** | **32.8** | **19** | **9.0** |
| 8 | Storybird | **4** | **9.3** | **8** | **11.6** | **2** | **4.9** | | | **14** | **6.6** |
| 9 | Writeandimprove.com | **1** | **2.3** | **5** | **7.2** | **2** | **4.9** | | | **8** | **3.8** |
| 10 | Anki | | | | | | | **6** | **10.3** | **6** | **2.8** |
| 11 | Speakandimprove.com | **1** | **2.3** | | | | | | | **1** | **0.5** |
| 12 | Grammarly | **1** | **2.3** | | | | | | | **1** | **0.5** |
| 13 | Movies and books | **1** | **2.3** | | | | | | | **1** | **0.5** |
| 14 | Rosetta Stone | **1** | **2.3** | | | | | | | **1** | **0.5** |
| 15 | Voscreen | **1** | **2.3** | | | | | | | **1** | **0.5** |
| 16 | Insta.ling | | | | | | | **1** | **1.7** | **1** | **0.5** |
| 17 | Wordreference | | | | | | | **1** | **1.7** | **1** | **0.5** |
| 18 | Fiszkoteka | | | | | | | **1** | **1.7** | **1** | **0.5** |
| 19 | Lingo Hut | | | | | | | **1** | **1.7** | **1** | **0.5** |
| 20 | Kanji Study | | | | | | | **1** | **1.7** | **1** | **0.5** |
| 21 | Tandem language app | | | | | | | **1** | **1.7** | **1** | **0.5** |
| 22 | Flocabulary | | | **1** | **1.4** | | | | | **1** | **0.5** |
| 23 | Drops | | | **1** | **1.4** | | | | | **1** | **0.5** |
| 24 | English Club TV | | | **1** | **1.4** | | | | | **1** | **0.5** |
| 25 | Google translate | | | **1** | **1.4** | | | | | **1** | **0.5** |
| 26 | YouTube | | | **1** | **1.4** | | | | | **1** | **0.5** |
| 27 | None of them | **0** | **0** | **10** | **14.5** | **4** | **9.8** | **0** | **0.0** | **14** | **6.6** |

The findings of the study also showed that *Kahoot* and *Duolingo* were the other two more popular crowdsourcing platforms and were used with similar overall frequencies in the studied four countries (*Kahoot* =63%, *Duolingo* =61.6%). Keeping in mind the more specific nature of *Kahoot* and *Duolingo* (i.e., they are not encyclopaedic sources as *Wikipedia*), and the fact that they were launched much later (in 2013) than Wikipedia, it can be argued that they are widely used in TUR, B&H, RNM and POL. One reason why those two platforms might be more popular than the others on our list is that experts usually evaluate them as fun, very straightforward and very simple to use apps that the language learners can start using even without registering (Nushi & Eqbali, 2017, p. 91). Another reason why *Duolingo* had been used by such a large number of students could be their advanced level of proficiency. In a study aiming to uncover the effect of mobile platforms on the process of teaching and learning English, Mospan (2018) found that (together with *Memrise*), *Duolingo* was the platform chosen by learners with advanced skills in the foreign language.

The differences in the use of *Kahoot* in the examined countries were also statistically significant. The analyses showed that POL and TUR students had used Kahoot statistically significantly more than students in B&H and RNM. While in the Polish sample, almost all of the students (93.1%) had used Kahoot for language learning, in B&H, only 44.9% ($z = 5.047$, $p < .0002$, two-tailed), and in RNM (29.3%), even a smaller group ($z = 5.861$, $p < .0002$, two-tailed), had used it to learn languages. There was not a statistically significant difference between POL and TUR (83.7%) in their use of Kahoot ($z = -0.881$, $p < .3783$, two-tailed). However, the analyses showed that a statistically significantly bigger number of Turkish students had used Kahoot than those in B&H ($z = 4.073$, $p < .0002$, two-tailed) or RNM ($z = 3.51$, $p < .0004$, two-tailed).

The use of *Duolingo* exhibited a partially similar cross-country pattern to *Kahoot*, but this time the analyses showed that POL students had used *Duolingo* statistically significantly more than all other three groups (POL-TUR, $z = 2.968$, $p < .0003$, two-tailed; POL-B&H, $z = 2.787$, $p < .0053$, two-tailed; POL-RNM, $z = 4.08$, $p < .0002$, two-tailed). There were no statistically significant differences between the number of students who had used *Duolingo* in TUR, B&H and RNM.

Kahoot is a game based (i.e., gamification) platform that was created with the "mission to make learning fun, engage learners through games, and unlock the learning potential of every learner" (Solemon et al., 2013, p. 34). The popularity of Kahoot in Turkey could be a direct consequence of the recent policy changes in the country. After mainly following the Grammar Translation Method for teaching languages and failing to teach students to speak in English (Hatipoğlu, 2013), in 1997, for the first time, the concept of the communicative approach into ELT was introduced into the Turkish educational system (Hatipoğlu, 2017; Kirkgöz, 2007). With this, the main aim of language classes became "the development of learners' communicative capacity to prepare them to use the target language (L2) for communication in classroom activities" (Kırgöz, 2007, p. 221). This, in turn, meant including more fun, game-like role-plays and activities that were hoped would motivate students to continue learning the foreign languages they were involved with. The explanation for the widespread use of Kahoot and Duolingo in Poland comes from a study conducted by Glowascki et al. (2018), who examined the use of gamification in higher education in the country. They state that Poland was among the first countries to start using this technology in higher education; therefore, students and lecturers are familiar with it and find it effective, engaging and motivating.

*Wikipedia, Kahoot* and *Duolingo* were followed by *Khan Academy* (23.2%) and *Memrise* (20.4%), which were used about three times less than *Kahoot* and *Duolingo*, and *Busuu,* which was employed by only 10% of the studied population. *Khan Academy* was particularly popular in RNM (56.1%), where more than half of the students reported to had used it to learn foreign languages. The combination of two factors might explain why *Khan Academy* was more popular with RNM students than with the other three groups. In a study conducted with basic and independent level students in Turkey, Şan and Aykaç (2020) found that *Khan Academy's* video-assisted grammar teaching significantly affected the success of students in their English classes. That is, *Khan Academy* is good at teaching grammar. In our study, the majority of RNM students placed themselves in the *Basic* (N=7, 17.1%) and *Independen*t (N=14, 34.2%) user categories, where students spend more time building their knowledge of grammar.

A striking contrast was uncovered between the uses of *Quizlet* and *Anki* versus *Storybird* and *Writeandimprove.com*. The first two of the crowdsourcing platforms were used only in Poland and by a relatively large number of students (*Quizlet*=N=19, 32.8%, *Anki*=N=6, 10.3%) while they were not listed by any of the students in TUR, B&H and RNM. Just the opposite was found for *Storybird* and *Writeandimprove.com,* which were listed as language learning

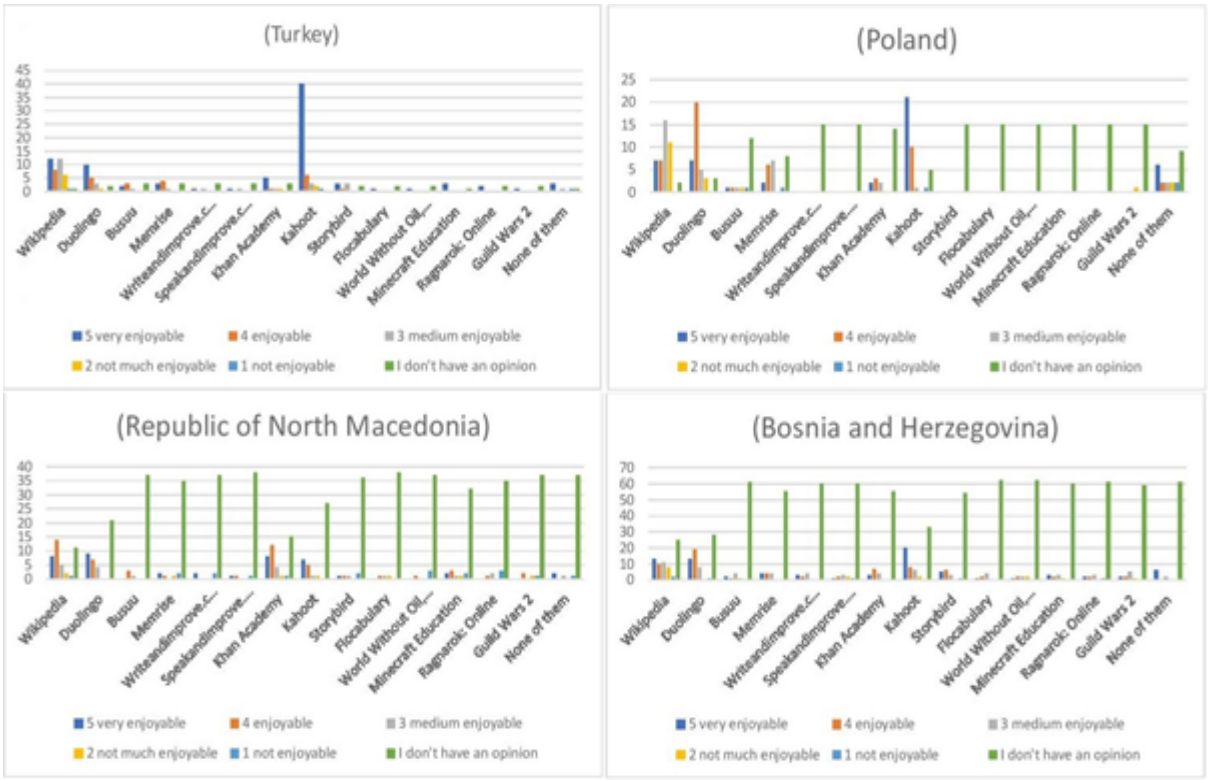
platforms that students in all studied countries had benefited from except for POL. The use of the remaining sixteen crowdsourcing platforms on the list was country-specific. There were 'clusters of crowdsourcing platforms' that were known to students in only one of the studied countries. As can be seen in Table 3, "*Speakandimprove.com, Grammarly, Movies and Books, Rosetta Stone* and *Voscreen*" were listed only by TUR students, *"Flocabulary, Drops, English Club TV, Google Translate* and *YouTube*" only by B&H students, and "*Instaling, Wordrefernce. Fiszkoteka, Lingo Hut, Kanji Study* and *Tandem language app*" only by POL students. RNM students did not have 'group specific' crowdsourcing platforms.

***RQ2: What crowdsourcing games or websites are used as a class activity, and how enjoyable they are according to language learners in TUR, B&H, RNM and POL?***

Our respondents were also asked to express their opinion regarding the relevant websites or games used as class activity using a Likert scale. Their responses are visually represented in Figure 1. It is evident that students in TUR, POL and B&H marked *Kahoot* as predominantly the most popular game-based learning platform in comparison to their colleagues in RNM for whom *Duolingo* was a more important tool used in language learning classes. As can be seen in Figure 1, 36.2% of POL students marked *Kahoot* as a very enjoyable crowdsourcing platform, and 35.5% described *Duolingo* as enjoyable. In the cohort with students from B&H, *Kahoot* was still marked as very enjoyable by 29% of the respondents and *Duolingo* as enjoyable by 27.5% of the students. In the Macedonian group, 22% of the students marked *Duolingo,* and 17.1% described *Kahoot* as very enjoyable. It is also important to point out that *Khan Academy* was more popular among RNM students, as 19.5% found it to be very enjoyable. Students in the other three countries were not enthusiastic about this crowdsourcing platform. *Kahoot* was by far the most popular tool among Turkish students. In Figure 1, we can see that 60.5% of them marked it as very enjoyable.

The setting in which crowdsourcing websites or games are used plays an important role as certain crowdsourcing platforms do not enjoy the same popularity when used as in-class or out-of-class activities. When discussing Research Question 1 (see Table 3), we saw that *Wikipedia* was the overwhelmingly favourite crowdsourcing language learning tool in the examined countries. However, its dominance is not evident in in-class activities, as shown in Figure 1, because *Duolingo* and *Kahoot* take the leading roles.

**Figure 1: Students' opinion of the games/ websites used as a class activity**




Munday (2016) researched the application of *Duolingo* in Spanish classes. She concluded that the popularity of *Duolingo* in language learning classes lies in its user-friendly interface, simplicity, accessibility in different formats and gamification aspects that students find more appealing than traditional tools for language learning. Games have their place in students' everyday lives; therefore, it is not surprising that teachers are trying to incorporate this resource in their class activities. Gee (2012, p. xiv) argued that games support the language learning process and activate different learning channels as "Games associate words with images, actions, goals, and dialog, not just with definitions of other words." Gunter et al. (2016, p. 232), who studied language learning applications and games, pointed out that "teachers have an array of learning supports to choose from to teach and reinforce academic content, including educational games and mobile learning applications. Knowing which tool to choose requires knowing the desired outcome and purposeful evaluation of the learning support."

Plump and LaRosa (2017, p.157), in their research on the application of *Kahoot* in the classroom to create active learning, point out that eLearning tools such as Kahoot "add positive energy, support concept exploration, and add fun to the classroom, which seems to translate into increased comprehension and motivation".

***RQ3: Have language learners in TUR, B&H, RNM and POL contributed to the development of available language learning/teaching crowdsourcing sites or games? If, 'Yes', what kind of content have they added?***

In this research, we wanted to uncover how enthusiastic our students were to contribute to the development of crowdsourcing sites or games. Before we embark on the discussion of our results, it is important to clearly define user-generated content. According to Daugherty et al. (2018, p. 19), it is "media content created or produced by the general public rather than by paid professionals and primarily distributed on the Internet". However, we believe that the concept

of crowdsourcing is more complex than simply content creation. Hils (2015, p. 49) claims that "crowdsourcing content creation is learner-centred by design because it leverages student knowledge to create an artefact that enlarges the base over which students can recognise how what they are learning has relevance to their lives".

**Table 4: Adding content to the sites or games**

| | | TUR | | B&H | | RNM | | POL | | ALL | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Content** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| 1 | commentaries (an explanatory series of notes) | **5** | **11.6** | **1** | **1.4** | **2** | **4.9** | **11** | **19** | **19** | **9.0** |
| 2 | comments (verbal or written remarks expressing an opinion or reaction) | | | **6** | **8.7** | **4** | **9.8** | | | **10** | **4.7** |
| 3 | audio recordings | **4** | **9.3** | **1** | **1.4** | **3** | **7.3** | | | **8** | **3.8** |
| 4 | essays | **5** | **11.6** | **2** | **2.9** | **2** | **4.9** | **1** | **1.7** | **10** | **4.7** |
| 5 | examples | **8** | **18.6** | **3** | **4.3** | **5** | **12.2** | **6** | **10.3** | **22** | **10.4** |
| 6 | exercises | **13** | **30.2** | **5** | **7.2** | **3** | **7.3** | **10** | **17.2** | **31** | **14.7** |
| 7 | tasks | **12** | **27.9** | **3** | **4.3** | **3** | **7.3** | **9** | **15.5** | **27** | **12.8** |
| 8 | video recordings | **3** | **7** | **2** | **2.9** | **3** | **7.3** | | | **8** | **3.8** |
| 9 | visuals (e.g., pictures, photos) | **10** | **23.3** | **7** | **10** | **6** | **14.6** | **3** | **5.2** | **26** | **12.3** |
| 10 | Kahoot quiz | **1** | **2.3** | | | | | | | **1** | **0.5** |
| 11 | Wikipedia article | | | | | | | **1** | **1.7** | **1** | **0.5** |
| 12 | fiszki | | | | | | | **1** | **1.7** | **1** | **0.5** |
| 13 | flashcards | | | | | | | **1** | **1.7** | **1** | **0.5** |
| 14 | none of them | **23** | **53.5** | **56** | **81** | **32** | **78** | **35** | **60.3** | **146** | **69.2** |

In the survey, the students were asked to indicate whether or not they had ever added any content to the listed crowdsourcing sites or games and if they had, they were asked to specify the type of content added by them. The data given in Table 4 show that most of the respondents (69.2%) did not add any content to the listed crowdsourcing sites, tools and games. However, here again, there were important differences between the studied countries. Among the examined groups, Turkish students were the ones with the most experience in adding content to crowdsourcing sites and games, while students from B&H were the ones with the least experience. Almost half of the students in the Turkish group (46.5%) stated that they had contributed to the development of the listed crowdsourcing resources. The percentage of the contributing students in the Polish group was 39.7%, in the Macedonian 22% and in the B&H group 19%.

When the type of contribution was examined, it was seen that overall, students mainly added exercises (14.7%), tasks (12.8%), visuals (12.3%) or examples (10.4%). Very few of them had

added *Wikipedia* articles, *Kahoot* quizzes, fiszki or flashcards. This is a slightly surprising result, keeping in mind that *Wikipedia* was found to be the most popular language-learning website in our study. When the contributions of groups from the studied countries were examined, it was found that the Turkish students added the biggest number of exercises (30.2%), tasks (27.9%), visuals (23.3%), examples (18.6%), essays (11.6%) and audio recordings (9.3%) when compared with the other three groups. Polish students were the group that added the biggest number of commentaries (19%), while Macedonian students contributed the biggest number of comments (9.8%). Analyses of the overall results in Table 4 show that respondents from TUR were the ones with the most experience in contributing to the development of crowdsourcing tools and websites, while the groups from RNM and B&H had not up to that point actively participated in shaping these new language learning/teaching resources.

Contributing to crowdsourcing sites or platforms could be beneficial for language learners, and the practice could be easily introduced in ELT lesson plans following a project-based learning approach (Zou et al., 2020). Zou et al. (2020), who investigated how *Wikipedia* can be integrated into flipped learning in higher education, reported that project-based learning by creating new *Wikipedia* entries highlighted collaboration among peers and created active learning spaces. The more encouraging part about this practice is that similar activities can be designed with other crowdsourcing sites and tools. When integrating such activities in foreign language classes, it should not be forgotten, however, that "student-produced content can take varying amounts of time and skill, and these variables are often controlled by the students. Educators need to be sensitive to the demands these tasks make on students" (Hills, 2015, p.63).

## Conclusion

The data coming from our four culturally and linguistically diverse countries show that there are intriguing similarities and differences in the ways in which foreign language learners in TUR, B&H, RNM and POL perceive, evaluate, utilise and contribute to the development of the various online crowdsourcing resources:

(i) The findings of the study show that while some of the platforms are 'more universal/internationally used' (i.e., employed in all of the studied countries), the majority of the platforms known to the participants in the current study are more country-specific. While *Wikipedia, Kahoot* and *Duolingo* were found to be the most popular crowdsourcing tools in the studied countries, eighteen different resources emerged as "context favourite" crowdsourcing sites (i.e., they were used in just one of the studied countries).

(ii) It seems that the setting in which crowdsourcing websites or games are utilised plays an essential role in determining its popularity as certain crowdsourcing platforms are not as popular as in-class activities as they are as out-of-class activities. *Wikipedia* was the most known crowdsourcing platform in all four countries, but students in TUR, POL and B&H marked *Kahoot* as the most enjoyable, most popular game-based in-class learning platform. Games have their place in students' everyday lives; therefore, it is not surprising that teachers are trying to incorporate such resources (e.g., *Kahoot*) among their class activities

(iii) Despite the noticeable differences between the participants coming from our four counties, in general, it was found that most of the students were still reluctant to add content to the available crowdsourcing sites or games. Language teachers should encourage active contribution to crowdsourcing resources since it has significant potential in helping students in their language learning endeavour as it can provide students with more in- and outside-class collaboration opportunities and more active learning.

Hopefully, the findings of this study would serve as guidelines for language learners, language teachers, teacher trainers, and crowdsourcing site developers who aim to make use of the new technological developments in the field and/or strive to create cross-culturally valid crowdsourcing platforms/games that ensure active language learning. Learning about new resources and acquiring new skills require a great deal of enthusiasm both from teachers and learners, but we believe its benefits are worth the invested efforts. As Hui et al. (2014, p. 875) argue, "students should learn both face-to-face and new online techniques because online methods provide a way to connect with a wider range of geographically distant users quickly."

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