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LANGUAGE TEACHERS AND CROWDSOURCING: INSIGHTS FROM A CROSS-EUROPEAN SURVEY

The paper presents a cross-European survey on teachers and crowdsourcing. The survey examines how familiar language teachers are with the concept of crowdsourcing and addresses their attitude towards including crowdsourcing into language teaching activities. The survey was administrated via an online questionnaire and collected volunteers' data on: (a) teachers' experience with organizing crowdsourcing activities for students/pupils, (b) the development of crowdsourced resources and materials as well as (c) teachers' motivation for participating in or employing crowdsourcing activities. The questionnaire was disseminated in over 30 European countries. The final sample comprises 1129 language teachers aged 20 to 65, mostly working at institutions of tertiary education. The data indicates that many participants are not familiar with the concept of crowdsourcing resulting in a low rate of crowdsourcing activities in the classroom. However, a high percentage of responding teachers is potentially willing to crowdsource teaching materials for the language(s) they

teach. They are particularly willing to collaborate with other teachers in the creation of interactive digital learning materials, and to select, edit, and share language examples for exercises or tests. Since the inclusion of crowdsourcing activities in language teaching is still in its initial stage, steps for further research are highlighted.

1. Introduction

The term *crowdsourcing* was first coined in 2006 in Wired Magazine by Jeff Howe (Howe 2006). The idea of crowdsourcing – outsourcing a task to a wider public through an open call – dates to long before that date. The rise of the digital media, however, has effectively widened the scope of possible tasks as well as their outreach. Consequentially, crowdsourcing started to receive more attention in the research community. In the last decades, many taxonomies of crowdsourcing were proposed (for an overview see Geiger et al. 2011). Among the many dimensions relevant to the concept is the remuneration of the participants, which allows to distinguish between *microworking crowdsourcing* (where people are payed to participate, like Amazon Mechanical Turk[1]) and *benevolent crowdsourcing* (where people participate without payment, like Wikipedia[2]). Another relevant dimension is whether the participants are aware that they are performing a certain crowdsourcing task or not. This distinction is referred to as *implicit crowdsourcing* (the task is hidden) vs. *explicit crowdsourcing* (the participants are aware of what they are doing).

A famous example of *implicit crowdsourcing* is reCaptcha, a system which serves to perform a CAPTCHA[3] and at the same time crowdsources digitization of analogue texts.[4] Games with a Purpose (GWAPs) are another example of implicit crowdsourcing: people come to play and by doing so, they perform a task, for example annotate language data. Successful GWAPs are, for example, Phrase Detectives (Poesio et al. 2013), JeuxDeMots (Lafourcade 2007), and ZombiLingo (Guillaume 2016). Interestingly, the creator of reCaptcha is also the creator of the first GWAP, ESP Game (von Ahn and Dabbish 2004). Furthermore, Wikipedia over time has managed to redefine the well-established land-

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[1]   www.mturk.com
[2]   www.wikipedia.org
[3]   CAPTCHA stands for Completely Automated Public Turing test to tell Computers and Humans Apart.
[4]   www.google.com/recaptcha/intro/v3.html

scape of encyclopedia creation via *explicit crowdsourcing*. Many other examples of explicit crowdsourcing practices exist such as the collective translation of SMS after the Haitian earthquake (Munro 2013), the participation of the community in the development of openly accessible dictionaries (Arhar Holdt et al. 2018), the activities proposed on Zooniverse[5] and similar platforms, etc.

In education, crowdsourcing can be defined as "a type of an (online) activity which an educator or an educational organization proposes to a group of individuals via a flexible open call to directly help learning or teaching" (Jiang, Schlagwein and Benatallah 2018: 11). For example, a language teacher may organize an activity where students prepare subtitles for an educational video or where they play a language game that implicitly produces linguistic annotations for a specific language dataset. While practicing certain language skills, students contribute to a resource that is useful and beneficial to the wider community. Secondly, teachers themselves can participate in crowdsourcing, e.g. by developing (openly available) teaching materials (exercises, tests, dictionaries) for their subject. In language education, crowdsourcing is supported by Computer Assisted Language Learning (CALL). With mobile and static devices such as smartphones, tablets, laptop and desktop computers, interested parties can participate in crowdsourcing tasks anytime and anywhere – classrooms included. The digital medium makes it also possible to directly evaluate the contributions. Depending on the task, quality control and feedback can be provided by the participants or by outside parties, such as editors, users of the resource in question, etc.

Crowdsourcing activities may (a) benefit education by creating educational content, (b) provide practical experience for the participants, (c) contribute to the exchange of complementary knowledge and (d) augment abundant feedback (evaluations) for learners (Jiang, Schlagwein and Benatallah 2018: 11). If properly implemented, they facilitate collaboration that triggers learning. They bring to focus that even in the past, great discoveries have rarely been the result of a single sublime mind distinct from the masses, but rather the result of continuous cultural blending that has produced collective results. Crowdsourcing challenges teachers to help students recognize and assess collectively created resources. Students are encouraged to search for the information they need and to think

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[5]   www.zooniverse.org

of others as useful and complementary knowledge resources. The tendency of crowdsourcing tasks to be beneficial for a wider community, e.g. by providing solutions to common problems and promoting freely available content, is in accordance with the values of open access, free education, democratic participation and active citizenship.

The actual inclusion of crowdsourcing activities in language education is in its initial stage. Digital platforms that facilitate collaboration are emerging rapidly, however, apart from some specific case studies (see Section 2), the new possibilities have not yet been thoroughly evaluated. Currently, it is unclear how familiar language teachers are with the (general) concept of crowdsourcing; how technologically equipped they are to implement different types of crowdsourcing activities; and last but not least, how motivated they are to include crowdsourcing in their teaching.

The European Network for Combining Language Learning with Crowdsourcing Techniques (enetCollect)[6] was established to explore these topics (Lyding et al. 2018). EnetCollect aims to unlock the potential of crowdsourcing techniques in the domain of language learning and teaching, focusing on enhancing the production of language learning materials by crowdsourcing. More than 150 researchers and stakeholders from 35 countries[7] joined the effort. One of the network's objectives is to explore the state-of-the-art pertaining language teachers and crowdsourcing and address questions such as: Do teachers know about crowdsourcing? Do they desire to learn more about crowdsourcing and to participate in such activities? What would (not) motivate them to use crowdsourcing activities in the language learning classroom? The present paper seeks to provide answers to these questions by reporting on the results of a cross-European survey. The results give first insights into attitudes towards crowdsourcing as well as crowdsourcing practices and needs in language classrooms across Europe.

The paper is structured as follows: Following an overview of the state of the art regarding crowdsourcing and language education (2.), we introduce the main research questions and the survey design (3.). In the following section (4.) we report on the main results of the survey before reflecting on the research questions and discussing the findings in more detail (5.). In the end, we provide a critical

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[6]   http://enetcollect.eurac.edu
[7]   Numbers as of March 2019.

reflection on the survey and ideas for future work (6.). The paper ends with a brief conclusion (7.).

2. State of the Art

Only few studies report on the use of crowdsourcing in the context of language education. Pemberton et al. (2010) collaborated on a CloudBank project to build a mobile and web-based crowdsourced information system to help international students broaden their knowledge of the English language and culture. By collecting, uploading and annotating interesting or puzzling language- and culture-related content from everyday life (e.g. texts, images or videos) in a common repository, students shared their experiences and knowledge with others, thereby supporting peer learning. Although a promising crowdsourcing system, questions about deliberate misuse and the quality of the shared content have been raised in the phase of evaluation as well (Pemberton et al. 2010: 147).

York and Stiller (2013) explore learners' digital literacy on social media. Students (that is, language learners) create comic memes, post online, and later receive comments from their peers as well as native speakers. The study shows that crowdsourcing supports learning vocabulary, phrases and expressions which extend beyond the content in a classroom setting. Chacón-Beltrán (2014) focus on the use of crowdsourcing and language learning in Massive Open Online Courses (MOOCs). They examine how MOOCs contribute to the development of second/foreign language skills by allowing learners of English to correct each other's work and crowdsource valuable peer feedback. In this way, hundreds of learners from the Spanish-speaking world were involved in a collaborative activity to provide comments to their peers on their learning activities. In addition, participating students were encouraged to interact via virtual courses moderated by course facilitators.

Gunter et al. (2016) examine the use of applications with crowdsourcing elements such as Duolingo[8] and Busuu[9] in a classroom experiment. Both applications contain a crowdsourcing element where translations into various languages are pro-

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[8]   www.duolingo.com

[9]   www.busuu.com

vided by the users. However, the study does not discuss learners' crowdsourcing but rather focuses on them practicing their language skills in these applications. The research shows that teachers can benefit from the accessible technology in the classroom by integrating these applications to support the curriculum and to assign appropriate exercises to their learners' needs.

Odo (2016) discusses the idea of crowdsourcing and language learning from the point of view of teachers. The possibility of accessing various online resources, such as blogs, YouTube, social networking sites, and online language learning communities, allows teachers to combine traditional teaching materials with an ever-changing and up-to-date content available on the internet. Teachers can use the potential of crowdsourcing in various ways: to support collaborative work and peer-feedback amongst learners by accessing applications and platforms online where they can share feedback and comment on tasks; as language evolves and younger generations may use different or new expressions, teachers can encourage learners to either contribute by, e.g. translating, or access information about language materials from particular parts of the target language communities online; or to participate themselves in creating suitable materials online and sharing them amongst their peers so that language teachers from different parts of the world can access and assess the usefulness of materials for the language learning context.

While the presented research illustrates the value of crowdsourcing activities for language education, to our knowledge, no studies focused on teachers' general perspective on crowdsourcing in language teaching, their familiarity with the topic, and their attitude towards these new possibilities. The present survey conducted under the umbrella of the enetCollect network seeks to address this gap.

3. Survey on Teachers and Crowdsourcing: Research Questions and Design

Research shows that teachers' use of information and communication technologies (ICT) is guided by their attitude, competence, and access to technology (Voogt and Knezek 2008). The survey presented in this paper aims at collecting data from language teachers (English, German, Spanish etc.) on their knowledge

about crowdsourcing for language learning, their attitude towards it, the currently present practices, and the technology in use. More specifically, the survey addresses the following research questions:

– Are teachers familiar with the concept of crowdsourcing?
– Are they themselves active in crowdsourcing activities? If yes, what are these activities?
– Are they including crowdsourcing in their teaching? If yes, what are these activities?
– What is their attitude towards crowdsourcing in language teaching in general?
– What would motivate them to include crowdsourcing into their teaching?

The answers were collected via a custom-made online questionnaire. The questionnaire was purposely concise and comprised of multiple-choice questions as well as options to provide free answers. As we assumed that crowdsourcing was not well known among teachers, a simplified definition of the term was provided on the first page of the survey. The questionnaire was only prepared in the English language as we assumed that most of the target participants (i.e. language teachers) would understand English sufficiently to participate.[10] The use of other languages was allowed in questions with free answers, however, almost all participants decided to answer in English. The structure of the questionnaire is presented in Figure 1.
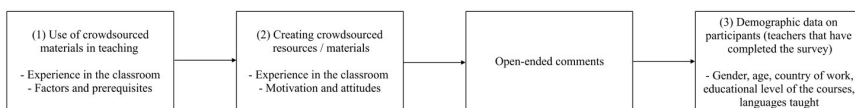

Figure 1. Structure of the Questionnaire: Overview

The first part of the questionnaire addressed the use of crowdsourced content in teaching. Teachers were asked to provide information about (previous) expe-

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[10] We are aware that this decision might have prevented some teachers from participating in the survey. However, for the pilot study, the language constraint was regarded as acceptable. For the follow-up studies, the questionnaire can be improved based on the current findings, and then translated into languages other than English. (The translations would have to be conducted very carefully to facilitate international comparison of the data.)

riences in the language learning classroom as well as an individual judgement on factors which may facilitate and promote the use of crowdsourcing activities in their teaching. In addition, teachers were asked to report on the availability of ICT infrastructure at their affiliated educational institution. The second part of the questionnaire focused on the creation of crowdsourced content. Here, the teacher's personal experience as users or creators of crowdsourced content for professional purposes as well as their willingness to participate in crowdsourcing activities was in focus. Teachers were also asked to indicate possible motivational factors. A separate question leaving room for open-ended comments was integrated to allow free commentaries related to the topic of the survey. The last part of the questionnaire served to collect the teachers' demographic and professional profile including data on gender, age, educational level they work at, languages they teach, and country they teach in.

The survey was launched online on 11/06/2018 and closed on 06/02/2019. The survey was distributed through various channels targeting language teachers. The participation in the survey was voluntary. The survey promotion was monitored by the National Representatives of enetCollect who were also responsible for the recruitments of participants.

4. Survey Results

In the given timeframe (June 2018 until February 2019), 1750 participants chose to start responding to the survey and 1129 participants completed the survey.[11] This number is lower than anticipated (as further discussed in Section 6). It has to be considered that this number reflects the number of respondents that voluntarily chose to respond to the survey. Thus, the answers may be biased. Nonetheless, these numbers provide a good starting point to gather first insights into teachers' perspective on and familiarity with the concept of crowdsourcing. Furthermore, it must be considered that none of the questions in the questionnaire were mandatory. Consequently, we present results with different frequencies of valid answers per question (i.e. the number of answers where the participant provided at least one click). The numbers of valid answers are provided accordingly. We would

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[11] The raw data as well as the entire questionnaire are available at request.

like to stress that the findings presented here are not representative for all teachers in Europe. However, they provide a much needed first insight into the current practices, preferences and attitudes concerning crowdsourcing activities in language education from the teachers' perspective that must be taken into consideration within future work in this field. As the aim of this paper is to give a general overview of the results, the data analysis is based on descriptive statistics.

4.1. Sample Structure

The participants' demographic information is given in the following figures. Regarding gender and age (Figure 2), most of the 859 participants who answered the corresponding questions were female and between 26-45 years old.
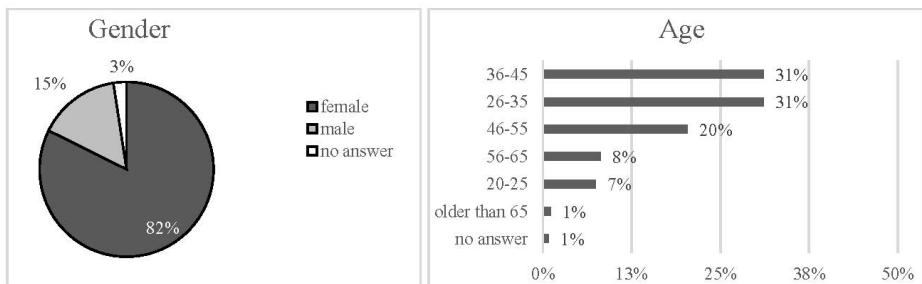

Figure 2. Gender and Age of Participants (Valid N=859)

Participants were asked what level of education they were teaching at (Figure 3). Most of the 861 participants who answered this question indicated that they teach at institutions of tertiary education (university/college) (37%), followed by those who teach language courses for language education as a second/foreign language (27%). The least represented teaching levels were kindergarten and language courses for language education as a first language (each 4%).
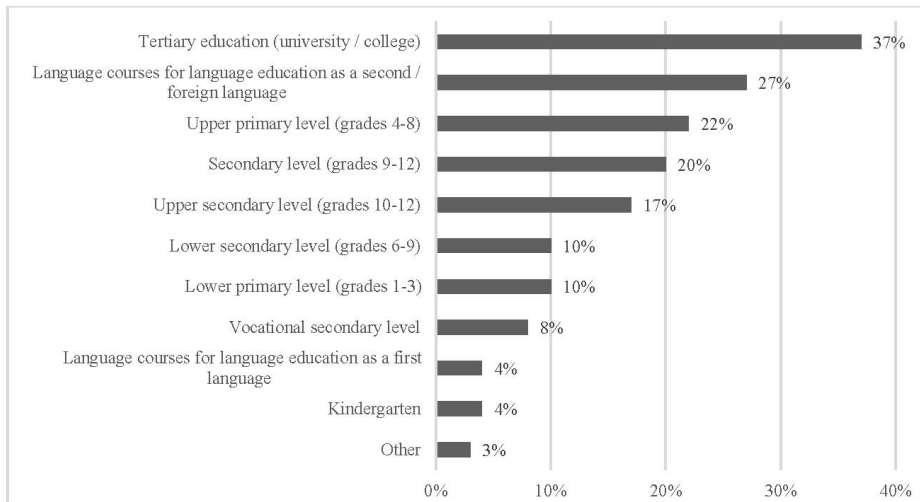
Figure 3. Teaching Level of Participants (Valid N=861)

Participants were asked to indicate which language(s) they were teaching and whether they were teaching those languages as first or second/foreign language. Multiple answers were possible and the numbers of valid answers for each possible choice are provided in Figure 4. Few participants that indicated to teach a language as first as well as second language, are considered here as well. Most participants indicated to teach a second/foreign language. The English language was selected 610 times, thus by all participants who answered this question. From these 610 times, 86% selected English as being taught as second/foreign language and 14% as a first language. Similar distributions can be observed for French (84% vs. 16%), German (79% vs. 21%), Italian (75% vs. 25%), and Spanish (85% vs. 15%) as well as other languages (53% vs. 47%) that have been individually named by the participants. Among these were Swedish, Croatian, Greek, and Serbian, to name but a few.
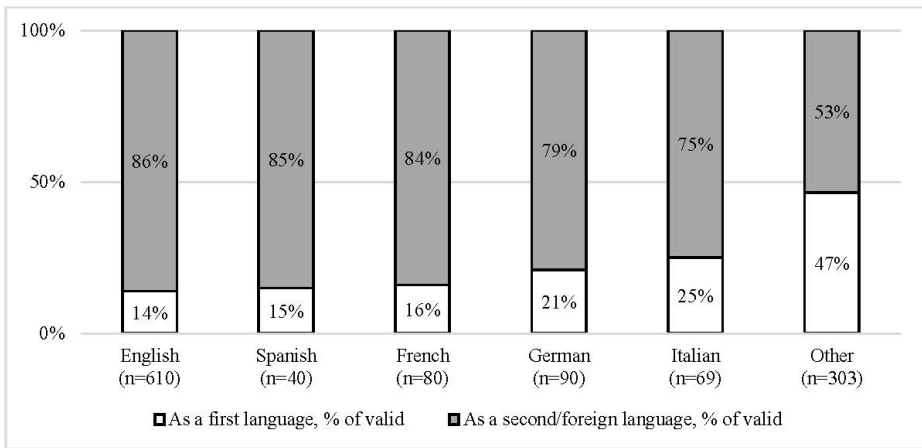
Figure 4. Languages Taught (Total Valid N=610)

All in all, participants referred to more than 30 countries they were teaching languages in (Figure 5). Most of the participants (852) teach in Turkey (198; 23%), followed by Serbia (75; 9%) and Croatia (65; 8%). The following figure provides numbers on the 15 countries most frequently named by the participants. "Other" countries include for example Sweden, Czech Republic, France, Belgium, and Spain. In addition, data on regions/states/districts were also collected but since they are not of direct relevance to the subject of this paper, we refrain from displaying the corresponding table.
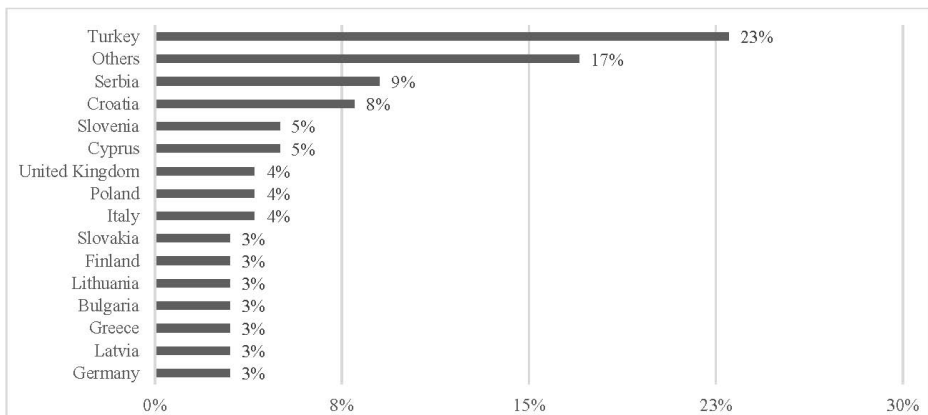

Figure 5. Countries Taught in (Valid N=852)

4.2. Teachers' Use of Crowdsourcing with Students

The first part of the survey (see Figure 1) addresses the teachers' active use of crowdsourcing in (language) education. The results are given in Figure 6 below. This question also provided an opt-out for the participants who felt they did not understand the topic of the survey well enough to proceed.[12] Among 1698 participants who answered the question, most indicated that they have not organized a crowdsourcing activity for their students.

Figure 6. *Have You Ever Organized an Activity Where Your Pupils/Students Participated in Crowdsourcing?* (Valid N=1698)

The participants who previously answered "Yes" were asked about the nature of the organized activities.[13] A list of possible activities to select from was provided. However, the purpose of this question was also to collect participants' own answers. Multiple answers were possible. The distribution of answers is given in Figure 7. Most participants indicated that pupils/students were creating learning materials for other students. Also noteworthy are the use of Duolingo and contributions to Wikipedia. Marking data in a language corpus, providing subtitles for educational videos, and contributing to Wiktionary were selected less often.

The option "Other" disclosed further activities the teachers are engaged in. Among these, actual crowdsourcing activities can be found, as well as activities

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[12] The purpose of the opt-out question was to reduce the quantity of (possibly) unreliable answers provided by the participants with limited understanding of the topic. The relatively high number of self-excluded participants confirmed our assumptions that at the moment, crowdsourcing is not a generally known concept among teachers. Personal data about the leaving participants was not collected. It was shown later, however, that given the surprisingly low participation rate it would prove valuable to know more about the leaving participants.

[13] The survey was structured so that only the participants answering Yes proceeded to this question. Due to technical problems with the survey, in a few cases this conditioning did not work properly, e.g. participants answered No in the first step and in the subsequent question entered "none" as their own answer. This subset of answers was removed from further analyses.

that would not be classified as crowdsourcing. From the list of entered answers, we identified applications and services such as Kahoot,[14] a quiz making learning platform, where users can create quizzes for others to answer, Powtoon,[15] a cloud-based service for creating animated videos and presentations, and Quizlet,[16] an application designed to help learners study using games and learning tools. Learners use this vocabulary-learning tool to create flashcards or use flashcard sets created by other learners. Respondents also named applications for file sharing or social media such as Dropbox[17] and Facebook groups.[18]
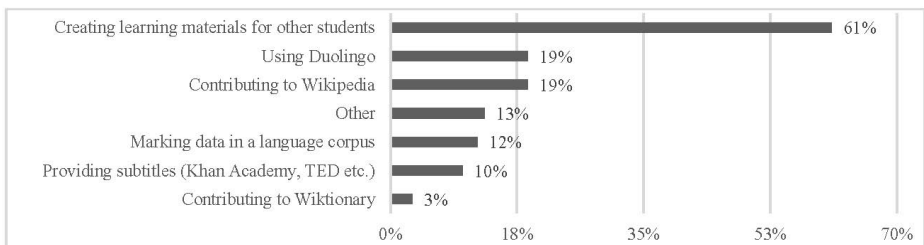

Figure 7. *What Was the Crowdsourcing Activity Your Students Participated in?*
(Valid N=389)

The participants were asked what would help them include more crowdsourcing activities in their teaching. They had to select the five most important needs from a predefined list and then rank them from 1 to 5, with the topmost important need ranked as 1 (Figure 8).

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14   www.kahoot.com
15   www.powtoon.com
16   www.quizlet.com
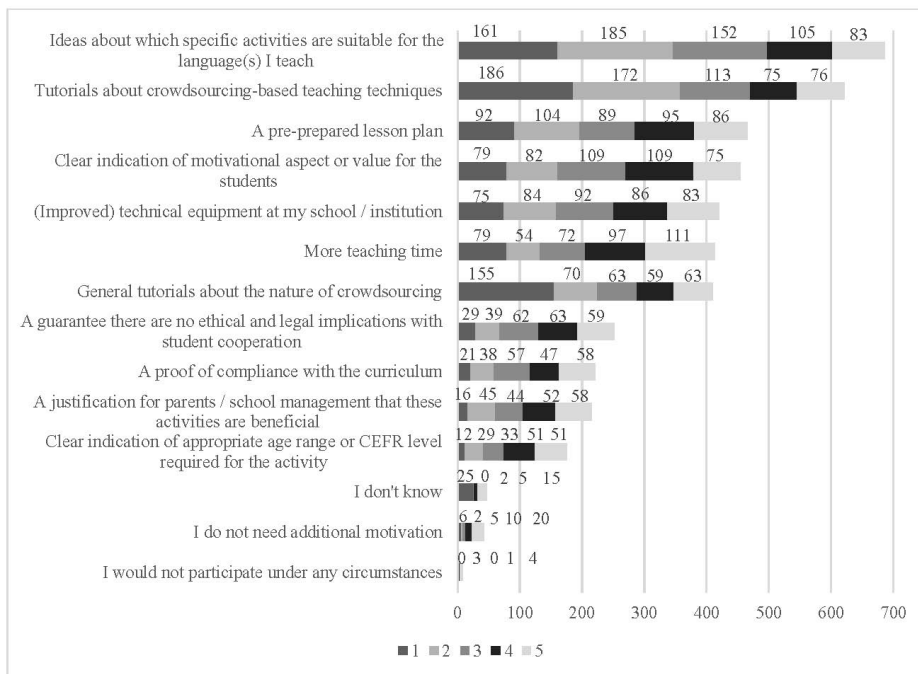17   www.dropbox.com
18   www.facebook.com/groups

Figure 8. *What Would Help You Include More Crowdsourcing Activities in Your Teaching?*

In general, the most frequently selected needs were ideas about which specific activities are suitable and tutorials about crowdsourcing-based teaching techniques. Also frequently selected were the need for a pre-prepared lesson plan, a clear indication of motivational aspect or value for the students, (improved) technical equipment, more teaching time, and general tutorials about the nature of crowdsourcing. As illustrated in Figure 8, ideas for specific activities and tutorials on crowdsourcing were most often ranked as the topmost important needs. The other needs in the list (e.g. those pertaining to legal issues and compliance with the curriculum) were selected less often. However, none of them can be deemed irrelevant.

The teachers' answers regarding technical equipment available at their institution are presented in Figure 9. In total, 936 participants answered the question (multiple answers were possible), 108 (12%) provided their own answer. The answers reflect that computers in computer rooms, students' smartphones, and

a computer in the classroom represent the technical equipment available to most participants (Figure 9). Rarely available are tablets, may it be student-owned or school-owned. Among the 108 participants who chose to provide their own answer as to other technical equipment available to students, more than half indicated that smart or interactive boards were available for students to use. The respondents quite often mentioned overhead projectors, CD players, whiteboards, or a laptop owned by the teacher. We would like to mention here that approximately 10% of these 108 respondents indicated that students had no access to technical equipment whatsoever or that the equipment they have access to is faulty.
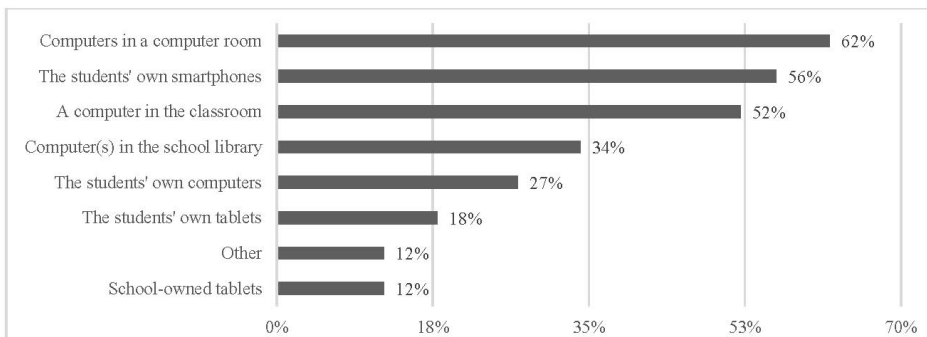

Figure 9. *What Technical Equipment is Available at Your School/Institution for Students to Use?* (Valid N=936)

4.3. Teachers' Own Experience with Crowdsourcing

The second part of the survey (see Figure 1) addressed teachers' own experience with crowdsourcing. Most of the 936 participants (60%) stated that they have not contributed to the wider community by crowdsourcing teaching material (collaborated on materials or shared them), but 40% indicated an experience with crowdsourcing.

The participants who answered in the affirmative were asked to specify the type of crowdsourcing they were involved in, and 371 participants replied (multiple answers were possible). The results presented in Figure 10 show that by far the most frequent activity is sharing teaching materials on open digital platforms. Also noteworthy are the use of Duolingo, marking data in language corpora,

and contributing to Wikipedia. Providing subtitles for educational videos and contributing to Wiktionary are less common.

Among the activities listed by the participants themselves are, again, Kahoot and Quizlet, as well as other applications, such as Busuu, Memrise[19] (a platform for learning languages and many other sciences using flashcards) or Speakapps[20] (an open source online platform to practice oral skills). The respondents also mentioned file sharing applications or social media platforms such as Dropbox, Whatsapp,[21] Facebook,[22] Prezi,[23] Youtube,[24] Pearltrees[25] (the freemium service that allows saving files and other content as well as collaborating with other contributors), etc. Many answers were related to creating and/or sharing material (usually teaching) in or via workshops, projects, conferences, blogs, university repositories and other online or offline means.
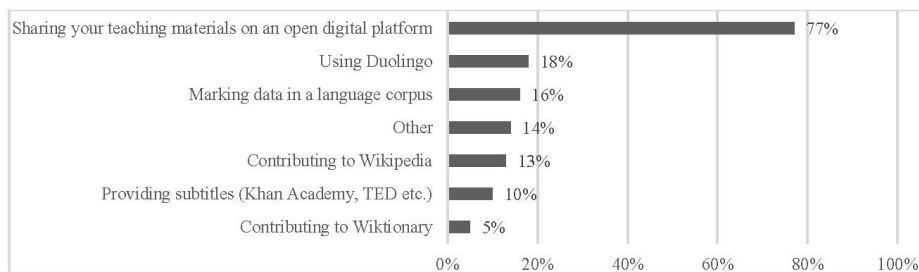

Figure 10. *What Was the Crowdsourcing Activity You Participated in?*
(Valid N=371)

Concerning the motivation of the participants to partake in crowdsourcing activities, the results draw a positive picture (Figure 11). The major part of the 924 participants that replied is willing to participate in crowdsourcing teaching materials for the language(s) they teach, e.g. by providing useful content. However, these results must be interpreted in light of the fact that the vast majority of the non-interested participants did not make it to this question in the survey at all.

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[19]   www.memrise.com
[20]   www.speakapps.eu
[21]   www.whatsapp.com
[22]   www.facebook.com
[23]   www.prezi.com
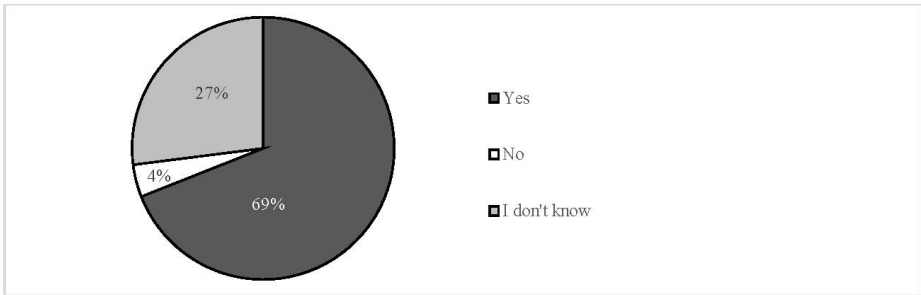[24]   www.youtube.com
[25]   www.pearltrees.com

Figure 11. *Generally Speaking, Would You Be Willing to Participate in Crowdsourcing Teaching Materials for the Language(s) You Teach (by Preparing/ Providing Useful Content)?* (Valid N= 924)

Participants were provided with a list of nine possible crowdsourcing tasks and asked to indicate how likely they were to participate in each of them. The results are given below in Figure 12. As the number of valid responses for each listed task differed (between 794 and 845), their comparison is not entirely straightforward. For the analysis, we have calculated percentages in relation to the task with the highest number of responses (845=100%).

Based on the number of votes for a very likely participation, the most popular task from the list is to collaborate with other teachers in the creation of interactive digital learning materials. The second popular task is selecting, editing, and sharing language examples for exercises or tests. The third popular tasks are sharing teaching material (descriptions, texts, etc.) with the wider community as well as selecting language examples for a learners' dictionary or grammar. Dictionaries also seem the language resource that participants are most likely to help develop, whereas the reported interest for annotating errors in learner corpora or annotating language data for other resources is lower. Few respondents chose to provide their own answers specifying online crowdsourcing tasks in which they are likely to participate, such as preparing and sharing educational videos and other visual materials, sharing their lesson plans, and using the online medium for students to practice oral skills.
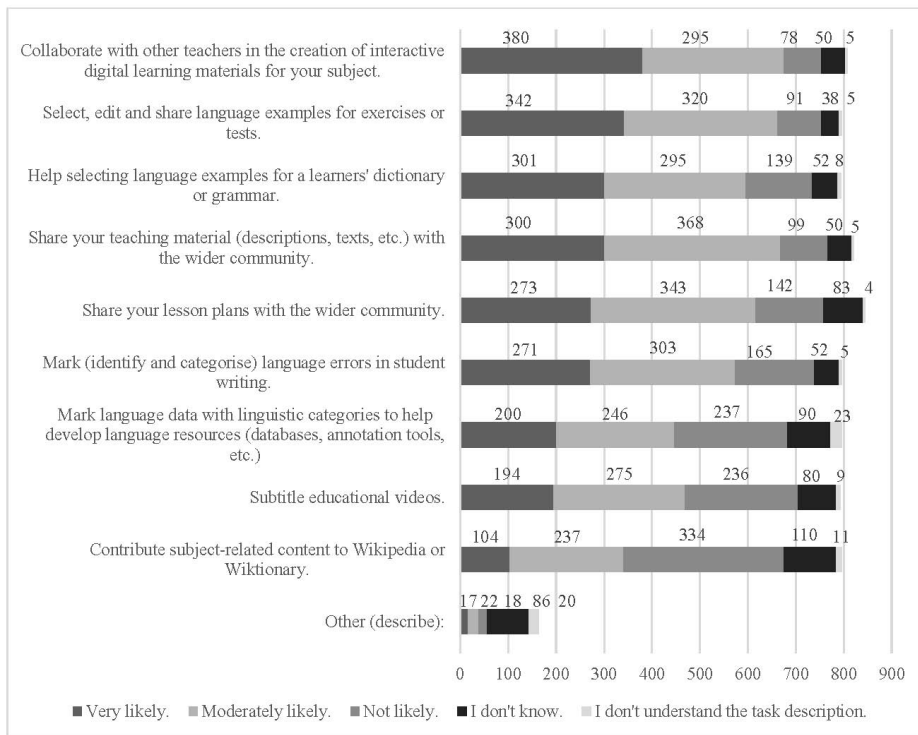
Figure 12. *How Likely is it for You as a Teacher to Participate in the Following Tasks (Online, not Just with Your Immediate Team)?*

Furthermore, the participants were asked to indicate what would motivate them to participate in crowdsourcing activities. They were asked to select the five most important motivational factors from a predefined list and then rank them from 1 to 5, with the topmost important factor ranked as 1. The results are given in Figure 13. The most often selected motivational factors are acquiring new skills and knowledge, and saving time in the long term on class preparation. Motivational factors selected less often are e.g. the feeling to have contributed to a greater cause, professional accreditation, and finalized products as the result, e.g. a textbook or a dictionary. It is noteworthy, however, that professional accreditation was selected most frequently as the topmost factor (rated as most important 139 times), followed by acquiring new skills (rated as most important 131 times) and the feeling to have contributed to a greater cause (rated as most important 126 times).
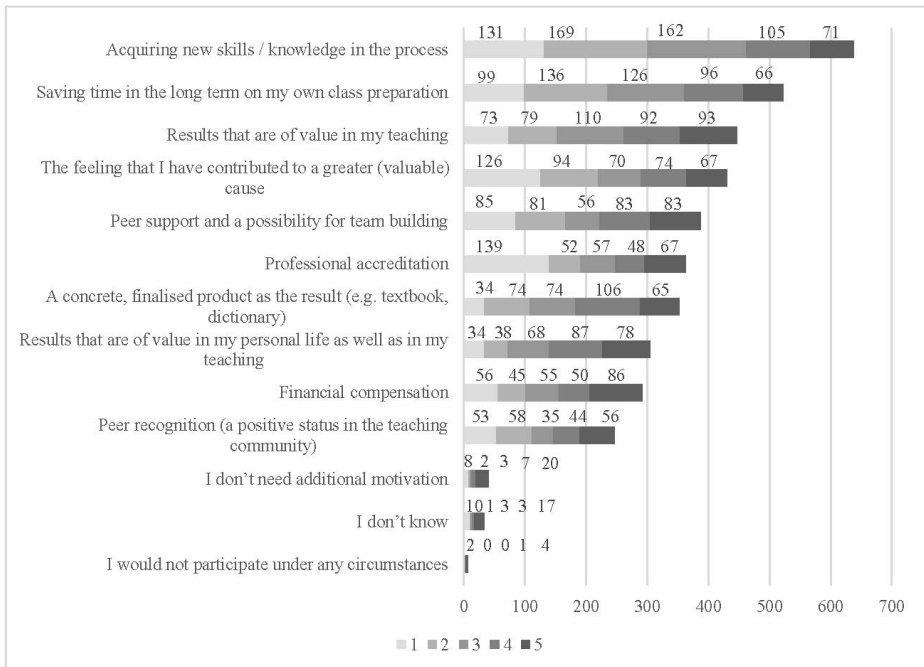
Figure 13. *What Would Motivate You to Participate in Crowdsourcing?*

4.4. Open-ended Comments

In the open-ended comments part of the survey, participants were asked to provide additional comments on the survey, describe good or bad experiences with crowdsourcing, or add anything else they believed might be useful to the research. The results totaled 83 comments, among which three were written in a language different than English (and were subsequently translated to English by the corresponding national representatives). For the analysis, the comments were classified into nine different categories according to their content, as can be seen in Figure 14. Some comments were classified into two different categories, such as the following example, which has been included in the categories [4] – participant requires more information – and [5] – participant finds crowdsourcing useful and/or necessary: "I have very limited experience with using crowdsourcing tools; however, those which I used worked great in the classroom and engaged my students. in the future I'd love to use more of such resources, although I feel

like I need to gain more teacher experience first in order to be able to smoothly incorporate them into the curriculum without losing much of the efficiency."[26]

Figure 14 shows that the highest number of comments expresses positive opinions about the survey and the research (18 comments in total). Most of them were encouragements, such as "I really like the idea behind this survey. Well prepared and organized. Good luck with your study." Similarly, three comments indicated that the participants would like to be informed about the results of the survey, which can also imply they supported the study or found it interesting. However, six comments highlight problems with the survey, particularly pertaining the lack of information or examples about crowdsourcing given in the survey: "A real example of crowdsourcing before answering the questionnaire would have helped to give more accurate answers." This type of answers can be linked to the 13 comments indicating participants' desire to better understand the concept of crowdsourcing: "I had to start again after the third page because I didn`t read closely enough the text at the beginning. My understanding has always been that crowdsourcing refers to obtaining funding." In the same line, three comments reflect a lack of familiarity with the concept of crowdsourcing and, thus, no experience with the application of it.
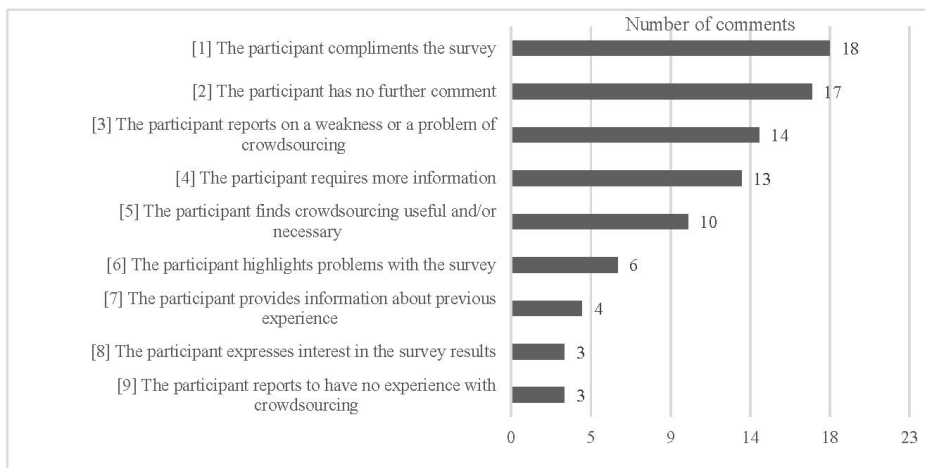
Number of comments

[1] The participant compliments the survey — 18
[2] The participant has no further comment — 17
[3] The participant reports on a weakness or a problem of crowdsourcing — 14
[4] The participant requires more information — 13
[5] The participant finds crowdsourcing useful and/or necessary — 10
[6] The participant highlights problems with the survey — 6
[7] The participant provides information about previous experience — 4
[8] The participant expresses interest in the survey results — 3
[9] The participant reports to have no experience with crowdsourcing — 3

0   5   9   14   18   23

Figure 14. The Content of Open-ended Comments: Overview (N=88)

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[26] Comments provided in this paper as examples are originally taken from the survey, and they have not been edited by the authors.

More relevant for this research are the comments evaluating crowdsourcing activities, which have been classified in categories [3], [5], and [7] (see Figure 14). According to the results, ten answers include statements about crowdsourcing being useful and/or necessary (category [5]), such as "I think crowdsourcing is something which should be a normal procedure for every teacher."; four comments report on previous experience with crowdsourcing (category [7]), like "I share some materials on some websites in order to help my colleagues to find exercises, online activities, games to use based on the topics they may be teaching/ they need to teach."; and 14 comments refer to potential problems with the implementation of crowdsourcing (category [3]). Across all comments evaluating potential problems of crowdsourcing activities, the main concerns mentioned are:

a) Lack of training in crowdsourcing: "I would like university to teach us on crowdsourcing…"

b) Lack of time and funds: "In Lithuanian schools you are not provided enough time/finances for creating your own material, that is why teachers are not eager to share their resources."

c) Crowdsourcing is too much work: "Sounds like a lot of extra work…"

d) Fair collaboration is an ideal: "True collaboration and sharing, all parties contributing, is an ideal I have never seen realised – yet. It is always one or two parties that give and the rest take."

e) Skepticism about the quality of content created via crowdsourcing: "I am not sure that crowdsourcing material is of good quality, and I am skeptical on using it in the classroom."

All these comments point to potential concerns from the teachers' perspective and must be taken into consideration when discussing and motivating the implementation of crowdsourcing activities in language education.

5. Discussion of the Results

The results of the survey provide relevant answers to the questions raised in the beginning of this paper (see Section 3). The findings confirm that at the

moment, the European community of language teachers is not particularly familiar with the concept of crowdsourcing. The low interest to participate in the survey can be taken as a first indicator, even more so since lots of potential participants opted-out of the survey as they believed they did not understand the concept well enough to proceed – despite the definition and examples provided on the first page of the questionnaire (research question 1). Furthermore, the results of the survey show that crowdsourcing activities in language classrooms are scarce. Many of the CALL activities or other ICT-based activities listed by the participants indicate that some teachers equate crowdsourcing with any sort of cooperation, in the digital environment or outside of it. These answers are valuable as they pinpoint the issues that need to be addressed when presenting crowdsourcing opportunities to language teachers. On the other hand, teachers listed several platforms, such as Kahoot, Powtoon, and Quizlet (Wright 2016), that can further be examined as examples of good practice in our future work (research question 2).

The results indicate that teachers have some experience in contributing to the wider community by crowdsourcing teaching materials. Moreover, the survey reveals teachers' general willingness to participate in crowdsourcing teaching materials for the language(s) they teach – at least among the respondents who persisted to this question in the survey. Among the most preferred crowdsourcing tasks is the collaboration with other teachers in the creation of interactive digital learning materials, followed by selecting, editing and sharing language examples for exercises or tests. These results are in accordance with the reported preference for activities that would (in return for their participation in crowdsourcing activities) save time in the long term (research question 3 and 4).

The most important aspects for future work are the questions about motivation. Results of the survey show two main factors that would motivate teachers to include crowdsourcing into their teaching: ideas about which specific crowdsourcing activities are suitable for the language they teach and tutorials about crowdsourcing-based teaching techniques. Moreover, the aspect of acquiring new skills and knowledge and saving time in the long term on class preparation represent two factors that are considered motivating by the teachers participating in our survey (research question 5).

Following the results on motivation, we think it would be beneficial to prepare

specific tutorials and scenarios for crowdsourcing activities in the language learning classroom on the one hand, and, on the other hand, design platforms for crowdsourcing language-related teaching materials that would provide optimal resources for the teacher community. However, it is important to consider technical limitations since the availability of technical equipment is not to be taken for granted as indicated by the teachers participating in our survey. The availability of technical equipment is expected to change to the positive in the future but must be kept in mind when developing and proposing possible crowdsourcing activities for language education here and now.

Furthermore, the results indicate that teachers understand the underlying complexity of crowdsourcing and crowdsourcing activities. The expressed need for ideas, tutorials and examples of best practices is supported by the fact that the setup of a crowdsourcing task is in fact not a trivial issue of selecting the most suitable platform. The preparation requires a clear formulation of aims and expected results, possibly splitting or aggregating the tasks, or assigning different tasks to different groups of students according to their interests and level of competence. Following this perspective, it is possible to relate crowdsourcing to already established teaching practices. For example, the strategies of problem-based learning (Boud and Feletti 1997) and project-based learning (Polman 2000) show many similarities with strategies in crowdsourcing: a clear-cut formulation of tasks, high levels of student initiative, the simultaneity of developing content and acquiring knowledge, a relatively long duration of a common activity, generation and evaluation of alternative solutions, possible re-use of the results, etc. Highlighting these similarities could motivate teachers who are already employing strategies of problem-based and/or project-based learning strategies to include crowdsourcing activities in their teaching as well.

Following Geoghegan (1994), educators can be divided into two groups: *early adopters* and *mainstream*. Early adopters favor revolutionary change, they are visionaries with a focus on technology, risk takers, experimenters, largely self-sufficient, and "horizontally" networked with personal networks that have a high proposition of interdisciplinary and cross-functional links. In contrast, mainstream teachers favor evolutionary change. They are pragmatic or conservative with a focus on problems and processes, and prefer proven applications of compelling value. They have an aversion to risk and a low tolerance for discon-

tinuous change (Geoghegan 1994). Concerns regarding crowdsourcing activities raised by some participants in our survey illustrate the opinions of the latter group, highlighting the requirements for the transition of the new ideas from the hands of early adopters to the mainstream. Our survey illustrates that teachers are interested in the idea of crowdsourcing activities in language learning in general, but the answers also show that they need clear examples of use that can be implemented step-by-step to provide time for change and adoption with limited risk of failure. They need support from trusted role-models and the presented examples need to respond to the teachers' actual challenges.

6. Critical Reflection and Future Work

Last but not least, we would like to address the low response rate to the survey as it was rather surprising considering the effort put into the dissemination of the questionnaire. Internal evaluations of our workflows highlighted that the 'most successful'[27] national representatives used their personal networks to recruit participants, as well as tried to motivate them for participation with additional arguments, for example clearly stating that the survey is interested also in the opinions of teachers who have no experience with crowdsourcing whatsoever. The low response rate could be explained by a probable overflood of online surveys (facilitated by the rise of the digital medium) targeted at teachers. For our future work, we are planning to further investigate the issue of motivation and shift our efforts towards actively promoting the benefits of crowdsourcing for teaching and the community. If possible, we would like to repeat the survey to obtain a more equally structured sample. Further studies focusing on different teaching levels might reveal the common practice and different approaches relevant to specific teaching levels. Further attempts to equally represent practice in different countries (including different teaching levels and even different teaching subjects) would facilitate a cross-national comparison of the results which was not possible in the present paper. For future work, also the translation of the questionnaire to the national languages needs to be considered, together

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[27] "Most successful" is to be understood here as generating a high response rate judging by the number of participants teaching languages in a single country (see Figure 5).

with possible modifications of the content: as highlighted by the pilot study, the definition and the examples of crowdsourcing provided on the first page of the questionnaire would need to be more explicit and inviting as to ensure that the respondents read the introduction before proceeding with the survey.

7. Conclusion

The results of the cross-European survey on teachers and crowdsourcing reflect the current state of language teachers' awareness of the value of crowdsourcing for language teaching and learning. The results obtained are not representative of all EU countries. However, our findings are in tune with previous results of teachers' attitudes towards innovative practices, further endeavor to involve the mainstream into such activities may be fruitful to explore the potential of crowdsourcing for language learning. The results present a valuable first insight into crowdsourcing practices, needs, and motivational factors in language classrooms across Europe and lead further research on the potential of the synergy between language education and crowdsourcing for the community in the digital era.

Disclosure Statement

No potential conflict of interest was reported by the authors.

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Nastavnici jezika i gomilizacija: uvid u europsko istraživanje

Sažetak

U radu je predstavljeno europsko istraživanje o nastavnicima i gomilizaciji (engl. *crowd-sourcing*). U istraživanju je ispitano koliko su nastavnici jezika upoznati s konceptom gomilizacije te su ispitani njihovi stavovi o uključivanju gomilizacije u aktivnosti pou-čavanja jezika. Istraživanje je provedeno s pomoću mrežnog upitnika, a prikupljani su podatci o: (a) iskustvu nastavnika u organizaciji gomilizacijskih aktivnosti s učenicima/studentima, (b) razvoju gomilizacijskih resursa i materijala, kao i (c) motivaciji nastav-nika za sudjelovanjem u gomilizaciji i upotrebi njezinih aktivnosti. Upitnik je distribui-ran u više od 30 europskih zemalja. Uzorak obuhvaća 1129 nastavnika jezika u dobi od 20 do 65 godina, koji rade uglavnom u institucijama tercijarnog obrazovanja. Podatci upućuju na to da ispitanici nisu upoznati s konceptom gomilizacije, zbog čega je niska stopa gomilizacijskih aktivnosti u učionici. Međutim, velik je postotak nastavnika koji su voljni sudjelovati u gomilizaciji kako bi se razvili obrazovni sadržaji za jezike koje poučavaju. Posebno su voljni surađivati s drugim nastavnicima u stvaranju interak-tivnih digitalnih obrazovnih sadržaja te odabirati, uređivati i dijeliti jezične primjere za vježbe i testove. Budući da je uključivanje gomilizacijskih aktivnosti u poučavanje jezika još u povojima, istaknuti su koraci za daljnja istraživanja.

Ključne riječi: gomilizacija, poučavanje jezika, jezična infrastruktura, istraživanje

Keywords: crowdsourcing, language teaching, language infrastrucure, survey