INTEGRATION OF DIGITAL LEARNING PLATFORMS AND TOOLS FOR TEACHING MEDICAL AND DENTAL ENGLISH ONLINE

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Abstract. *The article examines the benefits of using the online resources at a medical University in the process of teaching English for Professional Purposes to undergraduates and English for Academic Purposes to PhD students. This paper aims to analyze the effectiveness of integrating different e-platforms in the context of teaching medical and dental English online. The authors demonstrate their experience in applying Kahoot! and combining it with other digital learning platforms (e.g., massive open online courses at FutureLearn, Coursera, etc.) and communication tools (such as Remind, Google Classroom, Google Meet, Skype, Microsoft Teams, Zoom, and Cisco Webex). This integration provides a feasible ground for delivering lectures and practical sessions during the COVID-19 lockdown. The proposed array of e-platforms and tools is capable of enhancing the terminological competence of specialists in the field of medicine and health care, as well as the communication skills necessary for successful international communication and cooperation.*

Keywords: *e-platforms; English for Professional Purposes; English for Academic Purposes; medical and dental students; PhD students*.

1. Introduction

The COVID-19 pandemic has led to drastic transformations in the educational systems throughout the world. The shift to online learning requires a reasonable and elaborated approach to use the available resources efficiently (Havrylieva & Lysanets, 2018; Pavelieva et al., 2020). In particular, the current situation necessitates a well-planned integration algorithm in order to benefit from online teaching and learning as much as possible (Robinson et al., 2018). The objectives of this research are (1) to demonstrate our experience in applying *Kahoot!* and integrating it with other digital learning platforms and tools, which provides a feasible ground for delivering lectures and practical sessions during the COVID-19 lockdown, (2) to describe the major benefits of using the online

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resources at a medical University in the process of teaching English for Professional Purposes to undergraduates and English for Academic Purposes to PhD students, and (3) to elaborate background for using the described digital learning platforms and tools in teaching and learning English as a second language in other academic contexts. The study of online resources and tools will promote the terminological competence of specialists in the field of medicine and health care, as well as the communication skills necessary for successful international communication and cooperation.

2. Demonstration

The research has demonstrated multiple ways of integrating the available digital learning platforms and tools in the process of teaching medical and dental English during the lockdown. In particular, *Kahoot!* in an online setting proved to be an effective device, allowing to achieve several learning objectives, embracing both in-class training and selfpaced challenges. Indeed, a teacher can launch and host either a live quiz in class or a remote assignment (student-paced learning). Moreover, it is possible to play any existing kahoot, duplicate, edit, and tailor it to one's needs before playing, or create a completely new quiz from scratch. Studio collections of *Kahoot!* cover such core subject areas as Math; ELA (English Language Arts); Science; History & Social Studies; Computer Science. In addition, teachers can also add ready questions from the Question bank. The Reports page demonstrates all the results from inclass and remote learning, which renders yet another useful tool for assessment. In addition to viewing a visual report, a teacher can download the kahoot results report to Excel or save them to Google Drive.

Sharing a kahoot with students is a convenient and quick procedure, since it is integrated with *Remind*, *Google Classroom* or *Microsoft Teams*. For instance, *Remind* is a real-time "text" messaging tool that allows users to communicate with groups (e.g., entire classes or student organizations) or individual people. *Remind* has more than 20 million users and is employed in more than 70% of public schools (*Online Tools for Teaching & Learning*, 2018). Users can write text messages up to 140 characters. For teachers, this means being able to send out messages that students and parents cannot miss. For students and parents, this makes it easier to stay on top of assignments, deadlines, updates, and events going on in school.

In the context of distance learning, live kahoots are best played with groups of students via video conferencing tools like *Google Meet, Skype, Microsoft Teams, Zoom,* or *Cisco Webex*. A teacher hosts the kahoot on

his/her computer and shares the screen with students via any video conference platform. Players join using their own device (i.e., smartphone, tablet, laptop, or desktop). Alternatively, players can have two browsers open next to each other so they will see both the page to answer on, as well as a teacher's shared screen with the questions on. A unique game PIN will be displayed at the top of the host's screen. Players enter this PIN, followed by their nickname, to join the game in the *Kahoot*! app for iOS and Android. Alternatively, if they cannot install the app on their device, they can join by going to kahoot.it in their browser. As the host, a teacher also has the ability to kick unsavory or naughty nicknames out of the game. However, this will not be an issue if we enable the nickname generator when launching the game. Once every player has joined the kahoot, a teacher can lock the game so no one else can join. Next, students play the kahoot, while a teacher can pause and take advantage of teachable moments and encourage discussions between questions. A teacher can also fine-tune the kahoot by using the different timer and points settings. Questions can be supplemented with relevant images and YouTube videos to facilitate learning. Furthermore, one can choose from six different question types (*Kahoot! Certified for Schools*, 2020):

1) "Quiz" is the classic question type. It involves four answer alternatives for players to choose from. There is also the multi-select feature for questions with several correct answers.

2) "True/False" questions assess initial understanding and check how well students are paying attention.

3) "Puzzle" questions increase focus by getting students to drag and drop answers into the correct order.

4) "Poll" collects students' opinions and gathers instant feedback.

5) "Slide" gives students more contexts by adding slides of information between questions.

6) "Type answer" questions test knowledge retention by asking students to type short answers without cues.

With student-paced challenges, learners play at their own pace either at home or in class. Questions and answers appear on the student's screen, and they can play at a time that suits them best. A teacher can set the deadline and see their progress in real-time by viewing the kahoot report. In the case of student-paced challenges, a teacher can turn off the question timer so students have more time to focus on accuracy, thus promoting formative assessment. In other words, we can prioritize accuracy over speed and eliminate guesswork. One can also randomize the order of

questions to render the quiz more challenging and reinforce students' learning. From the report page, we can choose how to share the student-paced challenge with our students. We can invite players by sharing the URL or PIN or share it directly on *Microsoft Teams*, *Google Classroom*, *Remind*, *Facebook*, or *Twitter*. Players can join this studentpaced challenge up until the deadline. After being assigned the game pin or URL, students can start the kahoot any time before the deadline. They move through the questions at their own pace, selecting "Next" after completing each question. After the student-paced challenge expires, a teacher can share the final podium with students.

It is necessary to observe that the *Kahoot!* pedagogy is based on "creating a trusted learning space, encouraging a loop to go from a learner to a leader" (*Kahoot! Certified for Schools*, 2020). Hence, beginning as a consumer of knowledge, the student gradually "transforms into a researcher, game designer, and finally, a presenter of knowledge" (*Kahoot! Certified for Schools*, 2020). This approach is particularly relevant to adult learners, such as PhD students in our academic setting. PhD students are tasked with creating their own kahoots on a topic, in class or as homework. Having researched content individually or in teams, the learners create their games. The more creative learners are encouraged to be with their content, the deeper they will understand the concepts. As part of the next step, where learners host their own games in class, they power up their presentation and communication skills. Consequently, PhDs start their teaching career already well-equipped with the necessary knowledge and skills in applying different e-platforms and tools.

Kahoot reports allow us to capture useful analytics for formative assessment and gain insights to improve targeted instruction. Each report presents the key stats (i.e., how many students played, how many questions there were, etc.). The report also identifies questions that were the most difficult and might need reteaching as well as the students who may need help or did not complete the kahoot. Further, a teacher can create a new kahoot that only contains the questions that students found difficult. The summary page also displays which players got less than 35% of the questions correct and which participants didn't finish the kahoot. By clicking the Players tab, one can see the full leaderboard of all players that participated in the *Kahoot*! and their final scores. Here, a teacher can also get a full overview of the answers per player. In the questions tab, one see an overview of how many people got which question correct. To explore and dig further into each question in greater detail, a teacher can check the analytics on each question, shown in separate tabs of the downloaded report. This shows the player details, scores, and time taken

to answer – with an average calculated. This is useful for identifying if there was a particular question player struggled with, gaps in knowledge, or conversely, questions that perhaps were not challenging enough.

In our academic setting, we suggest integrating *Kahoot!* with massive open online courses (MOOC), devoted to relevant medical and dental topics. The combination of these resources is effective for online distance, distance learning, formative and summative assessment. For example, for first-year dental students, we integrated *Kahoot!* with the *FutureLearn* platform. Students were offered a self-paced online course "Discover Dentistry" (https://www.futurelearn.com/courses/discoverdentistry), which covered the public perception of dentistry in modern societies, definition of dental team roles, including the dentist, nurse, hygienist/therapist, dental technician and practice manager, key aspects of tooth anatomy, morphology, development and disease. Dental specialisms, including dental pathology and radiography, pediatric dentistry, endodontics, periodontics and oral surgery, the types and properties of dental materials, etc. By the end of this course, students are expected to be able to identify the roles within the dental team, identify the key features of tooth morphology and dental restorations and how they are recorded in dental records, compare the roles of dental specialists, including their training and responsibilities.

Kahoot on Essential Vocabulary for Careers in Dentistry		
1 - Quiz The key objectives of Dental Public Health are: a) Investigation of the tooth structure b) Root canal and gum diseases treatment c) Prevention of dental diseases and promotion of oral health d) Tooth extraction and bite correction	4 - Quiz Permanent dentition consists of: a) thirty-two teeth b) twenty-two teeth c) twenty teeth d) thirty teeth	7 - Quiz Dental pulp treatment is performed by: a) Periodontists b) Endodontists c) Prosthodontists d) Orthodontists
2 - True or false Calculus is a soft whitish deposit that forms on the surface of teeth: • False • True	5 - Quiz Third molars are usually referred to as: a) Cuspids b) Premolars c) Bicuspids d) Wisdom teeth	8 - Quiz Scaling and root planing is performed by: a) Endodontists b) Oral surgeons c) Periodontists d) Orthodontists

3 - Quiz Identify ONE term that is NOT a synonym for "primary teeth": a) milk teeth b) permanent teeth c) deciduous teeth d) temporary teeth	6 - Quiz The hardest material in the human body is: a) Enamel b) Cementum c) Dentin d) Bone	9 - Quiz The specialist who corrects cleft lip and palate is: a) Dental public health expert b) Oral surgeon c) Endodontist d) Orthodontist

For Ph.D. students, we decided to use the online MOOC course "Writing in English at University", hosted by Lund University at *Coursera* (https://www.coursera.org/lecture/writing-english-university). In particular, they studied the lesson on IMRaD (Introduction-Methods-ResultsDiscussion) structure of essays, which is the most commonly used format for scientific papers, or papers that are based on experimental studies. After watching the video recordings at *Coursera,* PhD students were offered a kahoot to check their understanding:

Kahoot on the IMRaD Research Paper Format		
1 - Quiz Acronym "IMRaD" stands for: a) introduction, methods, responses, and discussion b) introduction, methods, results, and discussion c) information, methods, results, and discourse d) information, methods, results, and discussion	6 - Quiz The introductory part of an IMRaD research paper involves the use of: a) active voice b) impersonal sentences c) passive voice d) imperative mood	11 - True or false Many disciplines tend to combine the results and discussion sections • False • True
2 - True or false The IMRaD structure is most commonly used in medical research False True	7 - Quiz Acronym "STAR" stands for: a) structure, type, acronym, and results b) sufficiency, typicality, accuracy, and relevance c) selfishness, typicality, accuracy, and results d) sufficiency, topicality, accordance, and response	12 - True or false It is very uncommon to see a conclusion as a separate section after the discussion part • False • True

3 - Quiz Acronym “CARS” stands for: a) counting research species b) covering a research structure c) complementing a research source d) creating a research space	8 - Quiz The "Methods" section typically involves the use of: a) the present tense in the passive voice b) the future tense in the passive voice c) the past tense in the passive voice d) the present tense in the active voice	13 - True or false The researcher can add a separate literature review or theory section after the introduction • False • True
4 - Quiz John Swales suggested the concept of: a) IMRaD structure b) CARS model c) “ecological metaphor”	9 - Quiz The use of visuals, such as tables, figures, diagrams, charts, is typical for: a) Introduction b) Results	14 - Quiz The major objective of the IMRaD structure is: a) to earn more money b) to get promotion at work
d) the STAR criteria	c) Methods d) Discussion	c) to convince your target reader d) to gain worldwide recognition
5 - True or false In the “Introduction” section, you should convince your reader of the importance of your work • False • True	10 - True or false John Swales and Christine Feak suggested that the “Discussion” section develops in 6 stages • False • True	15 - Quiz The aim of the “Discussion” section is to: a) describe the methodological procedure and material b) provide a brief summary of a research article c) interpret your findings and connect them to previous research d) provide acknowledgments and funding information

3. Conclusions

The suggested integrative approach facilitates the process of developing the terminological competence of specialists in the field of medicine and health care. *Kahoot!* can be easily integrated with massive

open online courses at *FutureLearn, Coursera* and other digital learning platforms, as well as communication tools, such as *Remind, Google Classroom, Google Meet, Skype, Microsoft Teams, Zoom,* and *Cisco Webex*). This integration provides a feasible ground for delivering lectures and practical sessions during the COVID-19 lockdown. The abovementioned list of learning platforms and tools is by no means exhaustive – it stipulates further development and elaboration. Thus, targeted and methodically thought-out integration of available online resources at higher medical educational institutions is one of the effective ways to promote the communication skills necessary for successful international communication and cooperation, to facilitate self-paced learning and formative assessment in teaching undergraduates, PhD students and academic staff in the field of medicine and dentistry.

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