"Let's Go… Kahooting" – Teachers' Views on C.R.S. for Teaching Purposes

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Abstract. The present study constitutes the first part of a study about the use of the online game-based of Kahoot as a tool for teaching practices and ways to do this. This first part, described in this paper, focuses on investigating teachers' views on the use of Kahoot. A number of 149 secondary education teachers participated for this reason in workshops where they were introduced to Kahoot and were asked to design their own tasks. Upon completion of the workshops a questionnaire was delivered to them to evaluate the tool and focus group discussions were conducted to detect their in-depth thoughts. The teachers' opinions were positive as they considered Kahoot a motivating tool for teaching and assessment purposes which can make learning fun and a creative process. The teachers revealed their intention to use the tool in their future teaching practices with their classes to a great extent.

Keywords: ICT · Classroom Response Systems (C.R.S.) · Kahoot
Game-based learning

1 Introduction

Today we are living in a world where everything around us is changing rapidly due to continuous technological developments and new inventions in many fields of life. Education cannot do otherwise but follow along with this digital advancement which affects educational methods, tools and materials facilitating teaching and learning [1, 2]. Among the many modes employed for teaching purposes is the use of "Classroom Response Systems" (C.R.S.), else known as "Audience Response Systems" (A.R.S.) or "Students Response Systems" (S.R.S.) [3]. Classroom Response Systems are generally portable devices which are used by learners in the classroom allowing them to respond very quickly and anonymously to questions posed by their teacher/s. In other words, they are designed to improve questioning and answering in the classroom and to provide instant feedback to teachers and learners [4].

According to literature, C.R.S. are believed to enhance students' interaction and communication in the classroom, [5] and foster cooperation between teacher and learners, promoting their active participation in the teaching process. It is argued that

C.R.S. provide opportunities for student engagement [6], thus increasing their interest in attending their school lessons [7]. Additionally, C.R.S. are believed to promote the development of relationships between students and teachers and turn the educational procedure into an enjoyable activity resulting in an effective student participation in the classroom activities [8, 9]. What is more, C.R.S. have been found to motivate learners, thus facilitating their learning, and consequently offering positive educational results [10]. It has also been shown that C.R.S. enhance classroom communication, increase attention and interest in the lesson [11] whereas at the same time help instructors to generate discussion in the classroom, reduce stress, enhance understanding of the lesson and use them for formative assessment purposes [12]. Similarly, according to literature C.R.S. have been used for attendance, gauging comprehension and testing purposes but have also been used to overcome limitations of traditional lectures or improve students' attitudes [13]. What is more, it is suggested that when C.R.S. are included in curriculum design, they can provide a new dimension for interactivity in the classroom and allow student and teacher interaction to a great extent [14].

Kahoot is one of those classroom response systems that is considered an effective way to introduce new concepts or assess the extent to which those have been already mastered by learners [15]. This well-known game-based on-line platform of Kahoot presents the above C.R.S. features. Kahoot is used to enhance classroom participation and assess learners' cognitive level in the form of a game. It is a free online tool that allows the implementation of quick quizzes to assess students' knowledge in real time. The quizzes are displayed on a computer for the whole classroom or teams or pairs, and students respond to the application downloaded on their computers, smart phones, or tablets. The teacher can even add videos or pictures to accompany the questions and facilitate learning.

The quizzes are answered by learners in a form of a game and students answer them in real time through an easy-to-use interface, enabling the teacher to assess their progress and the extent to which they have reached the desirable cognitive level. Kahoot is a game-based learning platform that allows students to approach the lesson more as a fun game rather than a boring or obligatory process within school duties [16]. Additionally, Kahoot is considered both an enjoyable and educational platform which impresses learners through the use of quizzes and questions relevant to their learning. Similarly, Kahoot is a challenging tool for learners which may be exploited by the teacher to introduce new content or assess previously taught knowledge. Kahoot requires simple and basic computer skills to use and navigate through its platform.

2   Rationale as to the Method and the Topic Chosen

The classrooms of today are becoming increasingly demanding. The majority of today's students are efficient users of technology and their capability to surf the digital world and use the many applications to inform themselves of all the latest technological developments too often surpasses that of their own teachers'. These amazing digital capabilities and skills of students have some impact in teaching and learning. On one hand, they enrich learners' background knowledge on a specific subject they address in class. On

the other hand, this plethora of digital skills raises their expectations for more exciting and innovative teaching methods and tools as opposed to traditional and indifferent or unattractive teaching methods and materials. To this end, teachers strive to find ways to attract their students' attention in order to make the lesson more interesting, perhaps turning it into a game but at the same time enabling them to increase their learners' cognitive level and efficiency. Thus, they seek ways to motivate them but also address the students' learning gaps, facilitate their understanding and guide their way into "learning how to learn", increase class interaction and gain new knowledge.

ICT and especially C.R.S. are believed to be among these digital suggestions that can help students become more active especially because learners view the lesson as a game, without however deviating from the learning goals and desired outcomes. Nevertheless, to achieve such goals it is necessary that teachers are trained to use such applications so as to lead their classes into joyful moments and better cognitive results. Based on the aforementioned points and on the need to help teachers supplement their knowledge with new applications and tools for more efficient and successful teaching practices we decided to conduct workshops for teachers of secondary education regarding the on-line C.R.S. platform of Kahoot for three basic reasons: introduce the platform and its educational use, explore teachers' views on its usage and features as well as their intention to apply Kahoot in their future teaching practices.

3 Methodology

3.1 Research Questions

Our research interest was to explore teachers' views on the use of Kahoot after its introduction to them in a two phase workshop. To this end, our effort emphasized the following: 1. Introduce the on-line C.R.S. Kahoot platform to teachers, 2. Investigate their views on its use and characteristics for teaching 3. Explore their intention to use Kahoot in the future. Therefore, our main research questions are as follows: 1. What is teachers' opinion on the features of Kahoot platform? 2. What is teachers' opinion on the educational use of Kahoot platform? 3. Do teachers intend to use Kahoot in their future classes and why?

3.2 The Sample

A total of 149 teachers of secondary education participated in the research. A number of 81 teachers taught subjects of theoretical studies (i.e. language, history, literature) and 68 of them taught science courses (physics, biology) or math. They were all formally certified by the Ministry of Education in basic ICT skills but this was not a prerequisite for their participation as some of them might had ICT skills but not necessarily certified and could still participate if they wished.

3.3 The Research Tools

The research employed both quantitative and qualitative research methods. Particularly, semi-structured questionnaires were delivered to teachers after their training and this decision was based on the fact that questionnaires are preferable for larger samples, as they are considered less time consuming and are easier to be quantified. However, and in order to have more analytical data and in-depth answers on teachers' views, a semi-structured focus group discussion was conducted with 25 randomly selected teachers. For validity purposes both questionnaires and focus group discussion questions were piloted with 18 (for the questionnaires) and 10 (for the focus group discussion questions) teachers respectively. The data taken were analyzed in order to modify, supplement or redesign the final versions for the appropriateness of the tools and clarification purposes. However, the researchers also observed and took notes throughout the whole process of teachers' training about Kahoot as they wished to have an opinion on their attitudes and responses regarding the new tool.

Structure of the Questionnaires

The purpose of the questionnaire was to collect data about Kahoot and consisted of eleven questions. These referred to issues such as easiness of use, clarity of instructions, environment interface, motivational features, ability to support teachers' work in class, ability to assess learners' knowledge, ability to enhance interactivity, accessibility, pedagogical implications, ability to enhance learning, its design features, and the extent to which they would use it in their future teaching. The answers were given on a five point Likert scale that ranged from "very much", "a lot", "quite", "a little" to "not at all".

Structure of the Focus Group Discussion

The focus group discussion was conducted in order to have an in-depth analysis of teachers' answers and clarify any vague points. The semi-structured questions were formed basically based on the questionnaire questions but explanations and clarification questions were also asked in order to provide us with more details for the purposes of the research questions.

Research Phases

Due to the fact that the number of the participants exceeded the capacity of the school laboratory (25 computers maximum) the research comprised six successive groups of 25 teachers each. The research was conducted in four phases as follows:

1st phase: The first phase involved teachers' invitation to participate in the workshop for the purposes of the research and their training on the use of Kahoot. After they had been fully explained the purpose of the workshop and their voluntary participation in the research was received we proceeded with the second phase.

2nd phase (3 h): This entailed a workshop for each one of the six groups during which, the first hour, the teachers were introduced to the tool as regards its use and characteristics with examples given by the trainers. During the last two hours, teachers were asked to implement quizzes and/or survey questions on topics of their interest or on topics they would like to introduce to their students. The aim was to allow teachers

to work on their own quizzes to familiarize themselves with the steps needed and understand the ways they could use Kahoot and integrate it in their lesson activities.

3rd phase (3 h): During the third phase, the teachers presented their questionnaires/quizzes/surveys to the rest of the co-trainees for everyone to see how it worked, receive feedback and perhaps improve the way they would like to introduce it to their own classes. At the same time they had the opportunity to exchange ideas and cooperate with one another to expand on their knowledge both on the features of Kahoot and methodological suggestions/ways to integrate it in their classes.

4th phase (1 h – questionnaire completion and focus group discussion): Upon completion of the workshop, the teachers were given a questionnaire to answer regarding their opinion on the use of Kahoot and its application in their future teaching. Additionally, a focus group discussion of 25 teachers, randomly selected, was formed to provide the researchers with more in-depth answers regarding their views for Kahoot in education.

4 Data Analysis

4.1 Analysis of the Focus Group Discussion

For the analysis of the focus group discussion the "content analysis" method was employed. After the transcription, the repeated listening and reading of the discussion content, the most significant parts that linked to the research questions were isolated and recorded and the data analysis units/key words were determined. The key words were "easy", "clear", "environment", "motivating", "supportive", "helpful", "difficult", "access", "pedagogical", "design", that were included in the participants' answers, in relation to the aims of the research and research questions.

The thematic analysis of the focus group discussion results revealed teachers' positive opinion regarding Kahoot as a tool: "… quite different, new and fun to use!". According to the teachers, Kahoot can provide them with an enjoyable way to diagnose or assess learners' knowledge: "I want to see how it works in class too… I think they will like it… I'll use it in the exam after the tasks…". As they explained, what amazed them was the fact that it is a game-based tool, easily accessible and they considered this very important for their learners' motivation which they constantly try to enhance: "If I go now [means to school]…with it [means to use Kahoot]… we'll stay in the classroom…there won't be a break, I'm sure… they'll love it". For this reason they appeared to be quite confident that this would be an effective tool in class: "I feel it works all right… it can certainly give me a clear idea of their answers very quickly… which is necessary …".

Additionally, according to the teachers' views, Kahoot was considered an inspiring tool that can increase anticipation and interaction in class and boost learners' self-esteem because it is a digital tool that learners can understand and learn very easily and thus, make their learning a fun game: "We always need to get away from serious things… kids just enjoy games… this can be a fun game…". Moreover, as they explained, they felt it would allow all learners, even the weaker or shy ones to participate: "…those I have [means students] that don't work much, they'll want to be in [means participate],

they will like it when their names are not shown… this is good for them… those that are shy… you know… with other students [means they won't feel embarrassed in front of others]".

Teachers also considered the possibility to insert videos very useful because learners are accustomed to them through YouTube mainly and they like their use in the lesson "I would particularly like to add videos… my students like this anyway. I'll use them in quizzes". However, the teachers also expressed their concern regarding the availability of a lab or a smart board as some of them (though a small percentage) had only one smart board in their schools which all teachers needed to use "I worry about it… there's only one smart board in school…and we all want to use when possible…". Regardless of this however, the majority seemed to be enthusiastic and suggested to those worried that all they needed was internet access, students' mobile phones and that it would not be difficult to overcome the lack of a smart board or a lab adding that they could just use their computer and a simple projector: "No worries! Just bring your laptop at school and use the wall… That will do it!… the rest leave it to them! [means the students]".

4.2   Analysis of the Questionnaires

The analysis of the teachers' questionnaires was conducted with the SPSS statistical package and some interesting results have been revealed (Table 1). According to the analysis the majority of the teachers (87.9%) answered that they found Kahoot a very easy tool to use with a percentage of 69.1% stating that the instructions that it offers are clear. A percentage of 74.5% of the teachers believed that Kahoot is a motivating tool for learning whereas an even bigger percentage of 81.9% admitted that it can support teachers' instructive work in class. Furthermore, 76.5% of the teachers answered that Kahoot has the ability to enhance interactivity and 51% believed that it also has pedagogical features. As regards the ability of Kahoot to enhance learning, 47% were positive with 65.8% of them admitting that it is an interesting tool for teaching. However, in the question about its future use the answers seemed to balance between 36.2% replying "a lot", 31.5% saying "quite" and 18.1% expressing "very much" as part of their intention to use it in the future. In detail, the answers are presented on Table 1 below.

Table 1. Results of teachers' questionnaires about Kahoot

Questions	Mean		%				
	Statistic	Std. error	Not at all	A little	Quite	A lot	Very much
Kahoot is an easy to use game-based platform	4.81	.049	0.7	1.3	2.0	8.1	**87.9**
The instructions of Kahoot are clear	3.81	.063	2.7	3.4	14.8	**69.1**	10.1
The environment of Kahoot is well presented and designed	3.37	.073	2.0	8.7	**52.3**	24.2	12.8
Kahoot is a motivating tool for learning	4.63	.062	1.3	1.3	4.7	18.1	**74.5**
Kahoot can support teachers' instructive work in class	4.01	.039	0.0	1.3	6.7	**81.9**	10.1
Kahoot can assess students' knowledge	4.64	.062	0.7	2.0	6.7	14.1	**76.5**
Kahoot has the ability to enhance interactivity	3.59	.080	4.0	8.7	25.5	**47.7**	14.1
Kahoot has pedagogical features	3.68	.073	2.7	6.0	26.2	**51.0**	14.1
Kahoot has the ability to enhance learning	3.61	.083	5.4	7.4	24.2	**47.0**	16.1
Kahoot is an interesting tool for teaching	4.45	.077	2.0	4.7	5.4	22.1	**65.8**
I intend to use Kahoot in my future teaching	3.50	.091	8.1	6.0	31.5	**36.2**	18.1

5   Discussion and Conclusions

ICT have had a very long journey since they last appeared suggesting an enormous number of ideas and applications to facilitate our daily lives. Especially for education, their integration in the teaching process has supported teaching and learning and has offered better educational results. Within the framework of ICT, Classroom Response Systems have been introduced for some time now as another way of approaching learning. Motivated by the necessity to assist teachers with their everyday practices, provide them with new ideas and offer them new tools to use in the classroom the researchers have presented in this paper their attempt to introduce the online game-based platform of Kahoot to secondary education teachers aiming to inform them about its features and suggest their exploitation as an instructive tool in the classroom.

According to the teachers' answers, Kahoot was found to be an interesting tool which can motivate learners, thus, turning a teaching session and especially assessment into a fun game rather than a boring process. As the teachers explained they enjoyed the ability to upload their questionnaires or quizzes on a platform which is well designed, easy and simple in its use with very clear instructions and objectives. Based on their answers, Kahoot has the ability to support their teaching and enhance interactivity among learners, a fact which, as they admitted, is very crucial because they want their students to be active participants rather than passive and indifferent learners. As the majority admitted they would like to use it in their future classes, though a percentage of 6% answered "a little" and 8.1% "not at all", when asked if they intended to use it in the future. However, everything new has the label of the "unknown" and sometimes this implies some sort

of fear or it takes quite a long time for someone to get well acquainted with it, take the first step and "try it out".

Based on the focus group discussion results, the teachers would mostly like to use Kahoot for assessment purposes to turn this process into a more enjoyable one. As they admitted, assessment is quite a "painful" and boring process for learners which they feel very uncomfortable with and almost never participate positively. They are usually negative and many of them even refuse to study because the traditional types of written tests are not attractive to them, some even fear them and therefore they lack any interest in them because they see them as punishment and not as feedback. Therefore, as teachers exclaimed, they are hoping to change this situation and turn those indifferent learners into more active and interested students for a number of reasons. One would be to motivate them "to revise for their tests more willingly"; another would be to change their thinking of tests and turn them from being a terrible process to a genuine interest of students to discover all about their progress in a form of a fun game which would take their stress away and "release them from their fear for tests".

Additionally, and as the teachers revealed, their training on Kahoot as another tool to use in the classroom was considered important. As they explained, updating their knowledge on new methods and tools is useful for two reasons: new ideas are necessary because they can help them meet the needs and the challenges of today's demanding classrooms; their learners are a young community whose digital capabilities exceed those of their teachers', a fact which is quite stressful and/or sometimes "intimidating" as described by one of the participants. Therefore, to be able to have "arrows in their quiver", as a participant eloquently stated, and use them when and where accordingly is a good solution to their lesson plans design; and this availability can offer them opportunities of varying their methods and tools to support their teaching and students' learning based on each teaching purpose and each student/s' specific needs.

Being a teacher is perhaps one of the most challenging professions today. If we really wish to make a difference in education, we should decide with no fear to take the initiative and meet the challenges without being afraid to experiment and try new ideas and methods. Though a magical process, teaching is also an everlasting and stressful fight both inside and outside the classroom aiming however at new and wonderful paths to knowledge which never seize to amaze us. As the years go by, technology enhances the effort for innovation in education and what all of us educators need to do is simply be present in these efforts, open-minded and willing to try; and then, maybe we could let our passion lead us to different but exciting and more efficient perspectives of approaching our learners and our methods and support their wish to be successful in gaining knowledge. All it takes after all is that we, educators, should be the ones to first believe in ourselves and our efforts and keep on trying.

The second part of the research, which is beyond the scope of this paper, due to the bulk of the data collected, is about the views of those teachers who finally decided to use Kahoot in their classes and the ways they finally chose to do this. Additionally, the students' opinions are drawn with very innovative suggestions regarding the educational exploitation of the tool of Kahoot, a fact which is quite interesting, given that their views are very essential as students are the actual target of all our efforts as educators.

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