Asian Journal of Education and Social Studies

17(1): 46-54, 2021; Article no.AJESS.67766
ISSN: 2581-6268

Education through Play- A Bridge between Kahoot Mobile Applications and Philately

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Authors' contributions

This work was carried out in collaboration among all authors. Authors ML and BVC designed the study, performed the literature searches and wrote the first draft of the manuscript. Author ALP managed the analyses of the entire study. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJESS/2021/v17i130414
Editor(s):
(1) Dr. E. Seda Koc, Namık Kemal University, Turkey.
(2) Dr. Velan Kunjuraman, Universiti Malaysia Kelantan (UMK), Malaysia.
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Complete Peer review History: http://www.sdiarticle4.com/review-history/67766

Original Research Article

Received 01 March 2021
Accepted 05 May 2021
Published 11 May 2021

ABSTRACT

In Romania of 2021, where society is constantly tempted by numerous changes in methodology and constrained by the development of the didactic act mainly online, as a result of the pandemic, education through play can be the long-awaited answer. The game itself can take various forms, sometimes the most interesting. The present paper seeks to present such a form. Starting from education through play, the paper aims to outline another possible dimension of the way of conducting the act of teaching-learning assessment and obtaining feedback. Thus through a series of worksheets, education through play is punctuated and finely delimited, as a bridge between mobile applications and philately. A series of exercises are proposed, which can be carried out in the mixed work variant. They can successfully provide lessons involving fun math or ecology, but the range of uses can be expanded. They can be used as materials in teaching new knowledge and in evaluating existing ones. This study certifies that education through play knows no limitations as long as the trainers has several key skills and has access to various resources.

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Keywords: Mobile applications; kahoot®; thematic philately; math; educational perspectives.

1. INTRODUCTION

The first years of a child's life are of critical importance because they lay the groundwork for later life. In early childhood, patterns of behavior, competence, and education are initiated and established [1]. Education through play has a special role in this context. The game becomes very important from the first years of any child's life. It builds the relationship between parent and child, later between teacher and child, and is also the key to the learning and development of the young person [2]. It also influences social and emotional development in general, being an activity that can be easily used in the education process.

Education through games is a valuable, frequently used method by which the child explores the world through his senses. It also helps him/her to develop certain abilities and skills, and at the same time to perceive and understand the dynamics of the world around him/her. It can have a positive and profound impact on a child's adult life [3].

In the contemporary digital era, introducing computational thinking concepts is considered an imperative need at all stages of schooling, since they are inextricably linked to skills applicable and beneficial in everyday life [4]. Researchers and educators around the world have found that play education is by far the best way for a child to acquire skills [5,6].

Research (in the strict sense of information), expression, experimentation, and teamwork are the most notable [2]. But also qualities such as creativity and curiosity are and can be easily modeled through play [7]. Also, the experience and knowledge that the young person acquires by playing are reflected in the intellectual and emotional development.

We can say that the game has a double role in the education of young people. Intellectual development, and on the other hand emotional development, is the result of combining the logical and creative parts of the brain [2]. For example, by intellectual development, we mean that play can be helpful in verbal development. The little one learns to understand what is being said to him/her, to apply, to memorize, to imitate, and even to recognize what he/she sees or hears. The game can be the main pawn in acquiring much faster writing and reading skills.

By emotional development, we mean that the game brings emotions to the forefront and is a good way to explore their feelings and (re)discover innate skills. For example, through musical games, a person develops sensitivity to sounds and musical notes. Through drawing games, develops imagination and creativity, and through coloring games, learns colors and uses them to create fascinating worlds.

Education through play begins from the first moment of contact with the world around, then continues in childhood and throughout life. The game offers the little one the chance to learn and grow in a beautiful and fun way [1,2]. At the same time, it connects the environment, the family, and the world harmoniously. Regardless of age, the game will always be a means by which a person can learn, memorize and reproduce much faster. It is the way the little one learns to socialize, to think, to mature and most importantly he/she learns by having fun. Studies [1,3] show that the more they play, the more successful children are in life [8].

The game satisfies the child's needs to the highest degree: action, movement, and, last but not least, expression. In the game everything is allowed, everything becomes possible [9]. Therefore, the game is the richest source of information that the child can access and so we can say that the most important activity of a teacher, and even a parent, is to help their child learn through play [2]. Education through play can be the healthiest way to raise the little one.

The involvement of the teacher and the parents in the game world is beneficial for the relationship between them. There are cases when the game is perceived as a relaxing activity, but it can turn into an authentic and attractive learning activity very quickly.

Using the game to spend free time and then using the game to learn various things often overlap. Today the two aspects are perceived as a unitary whole. In these conditions, education through play today becomes an alternative in kindergartens, schools, but also at home, through which the little one learns skills and qualities beneficial for life.

The child plays, learns, and has fun. The fun itself can be ensured both by current games (for example, those made available through mobile applications) and by games less adapted to these days, respectively those associated with philately and philatelic issues.

Conceptually speaking, philately is the occupation of collecting and studying postage stamps and other ancillary pieces - envelopes on the first day of the issue, parcels, illustrated maximum books, postcards, postage, and special cancellations, and even documents from the history of the post office [10,11]. This means, first of all, the active use of free time. Step by step, it develops the spirit of observation, stimulates attention and intelligence, makes aesthetic education, makes friends, develops the love of work and life, as well as the love of knowing the beauties of nature.

Philately is a very attractive and easy way to enrich the knowledge of general culture, knowledge of the history, life, customs, art, and culture of peoples. Besides, it provides us with knowledge about the fauna and flora of various parts of the globe, assisting us in understanding and adopting the principles of applied ecology [12], but also about outer space. Through the large volume of information, it helps to thoroughly learn history and geography, to love literature and art, to learn foreign languages, to know the dynamics of the environment [12], and last but not least, to know the great political events, economic, scientific, cultural and sporting. All this, both from the country and from abroad.

Being an occupation for all ages, it can be practiced by anyone and anywhere. Whether in summer or winter, in the mountains or at sea, on holiday or at home, at the table or in an organized setting (association or philatelic club), philately does not deny [13]. In the true sense of the word, however, it is practiced only in philatelic circles. As a rule, they carry out a rich activity of philatelic orientation and guidance, taking into account the requirements of the members. However, although poorly immortalized in the scientific community, it was not uncommon for philatelic concerns to cross the boundaries of profile associations. Most often as a reference in the media [14,15]. The passion for philately was and still is perceived as a form of education through play, the game itself being limited to the study and collection of philatelic effects. As mentioned earlier, the game itself can take various forms. Sometimes one of the most interesting. The same happens with play education associated with philately. This embodies the instructor's passion, and nuances in the applications he proposes depending on the specifics of the intellectual and emotional development of those trained.

Starting from education through play, the paper aims to outline another possible dimension of the way of conducting the act of teaching-learning assessment and obtaining feedback. Thus, through a series of worksheets, education through play is punctuated and finely delimited, as a bridge (semantically speaking) between mobile applications (Kahoot® platform, in the case of the present study) and philately. A series of exercises are proposed, which can be carried out in the mixed work version (onsite, but also online). They can provide lessons involving fun math or ecology, but the range of use can be expanded. At the same time, they can be used as materials both in teaching new knowledges and in evaluating existing ones.

This study certifies the idea that education through play knows no limitations in time and space, as long as the person providing the training has several key skills and has access to various resources. In this context, we legitimately ask ourselves the following question: "Can education be done through play?", and also "Can education be done through a mix between mobile application (via Kahoot®) and thematic philately?". The answer, as will be seen in the study, is definitely "YES".

2. MATERIALS AND METHODS

The documentation in carrying out this study involved three stages. The first of these was to understand the characteristics of education through play. This involved several specialized studies and guides to good practice [9,16], with emphasis on the typology, values, and implications of the game in education.

The second stage coincided with the activity carried out, more and more often, during the computer-assisted training hours. In addition to these classes, computer learning through various multimedia tools is still an active teaching method [17]. In this context, computer-assisted instruction allows an education based on the intellectual profile of the student and not only. Moreover, relatively recent advances in the sciences of education would have been inconceivable, unmanageable, and even

unattainable without the support of modern technology [18], in the sense of learning management systems, such as Kahoot® [19].

Taking into account the advantages and disadvantages associated with e-learning [20-22], this involved identifying and analyzing key tools for ensuring e-learning. Of all these, only the Kahoot® application was considered for the present study. In this platform, a series of exercises adaptable to the classroom were performed, both on-site and online (through Zoom®, KnowledgeBase®, MS Teams®, etc.).

Kahoot is a game-based learning platform used to review students' knowledge, for formative assessment or as a break from traditional classroom activities. It is among the most popular game-based learning platforms, with 70 million monthly active unique users and used by 50% of US K-12 students [19]. Kahoot is an educational application that can be accessed from any device (laptop, computer, tablet, phone, etc.) that has internet access (if it has not been downloaded to the device on which it is used) [23]. This application has a free version, which allows users to compose simple educational games with two and/or four answer options, but also a more complex version. The latter involves certain costs, but also allows for more interactive, and equally complex, tests.

3. RESULTS AND DISCUSSION

Only the philatelic effects were involved in carrying out the tests for the present case study, which resulted in the third stage. This stage was limited to identifying, analyzing, and adapting various pieces / philatelic materials (mainly postage stamps and stamps), to the need for education through play. The proposed game, as a result of the combination of the tools offered by the Kahoot® platform and the thematic philately, is limited to exercises for fixing new knowledge, as well as exercises to verify previous knowledge. The game begins and ends with two specific screens, namely the one for displaying and disseminating the access code among the participants (see
Fig. **1**a), and the one for displaying and verifying the results obtained after completing the test by the participants (see
Fig. **1**b).

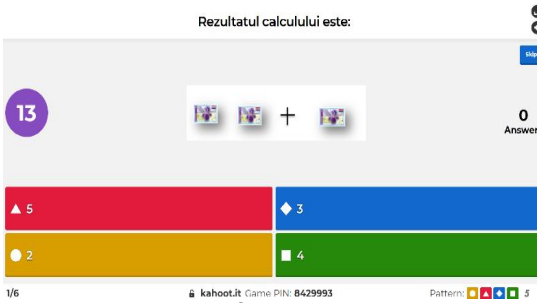
Next, a series of exercises are presented at a synthetic level, which uses as working images stamps of the most diverse, under the theme "addition and subtraction of natural numbers less than 10" (see Fig. 2). As can be seen, the philatelic pieces are used only as support (as reference images) in performing the test. The questions and/or, as the case may be, the requirements to be met by the participants are easy to follow (see Fig. 2 and Fig. 3), as they only deal with questions that require two or four possible answers. Of these, only one variety of answers is accepted as correct.

In the present study various classroom work scenarios were implemented. It relied both on meeting and working in a team in a face-to-face regime, as well as in approaching, explaining, and solving the requirements proposed strictly online.

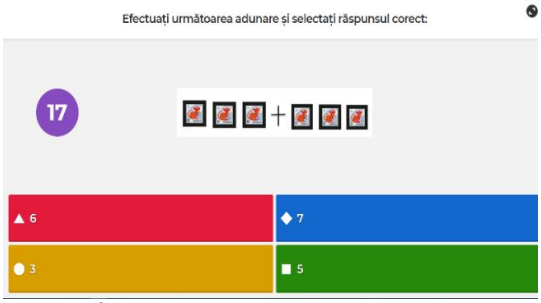
Regardless of the format of the requirements, an attempt was made to present the content and the message in a form that was as easy to understand as possible. Also, where appropriate, additional information was provided to fully understand the requirements. An example of this is shown in Fig. 4b, where it is specified that there may be several correct answers. At the same time, through the fragments of the tests and their way of presentation, we chose to show that the relationship between philately and the use of technologies is an interesting one.

(a) Display the access code for participants (b) Displaying participants' results

Fig. 1. Example of screens at the beginning and end of the proposed game



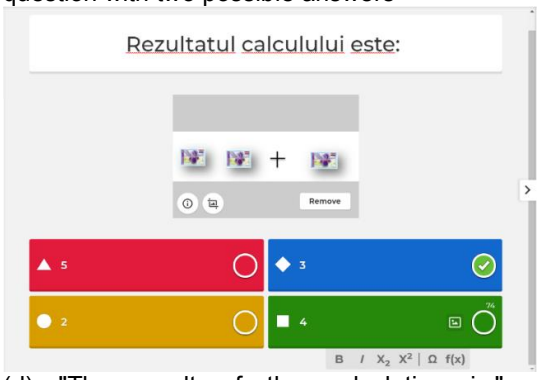
(a) "The result of the calculation is:" - requirement with four possible answers



(b) "Perform the next addition and select the correct answer:" - requirement with four possible answers

(c) "Is the result of the substraction 2?" - question with two possible answers

(d) "Perform the substraction:" - requirement with four possible answers



(d) "The result of the calculation is:" - requirement with four possible answers

(e) "Perform the following addition and select the correct answer" - requirement with four possible answers

(f) "The result of the meeting is 8:" - requirement with two possible answers

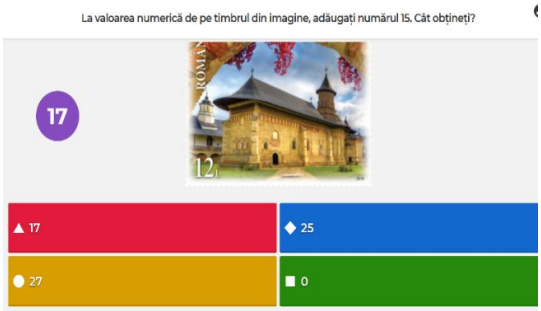
(g) "Make the substaction:" - requirement with four possible answers

Fig. 2. Examples of questions for verifying the acquisition of mathematics knowledge, via the basic elements of the operations

(a) "The numeric value on the stamp is an odd one:"

(b) "The numeric value on the stamp in the image is:"

(c) "The numeric value on the stamp in the image is greater than 20:"



d) "Add 15 to the numeric value on the stamp in the image. How much do you get?"

Fig. 3. Examples of questions for verifying the acquisition of mathematics knowledge via recognition of various numerical values

(a) "What is the geometric shape of the stamp?"

(b) "What geometric shapes can we observe?" Tips: (select one or more answers)

(c) "The snowman is behind the children"

(d) "The puppy is to the right of the mailbox"

Fig. 4. Examples of questions for verifying the acquisition of mathematics knowledge via recognition of various geometric shapes and body positioning

The structure proposed in the working methodology, although it is too short, is still coherent and achievable with a minimum of effort by anyone who has access to the internet. If in the first instance we only set out to suggest an educational activity, gradually, through exercise with the mobile application, we came to understand much better what we want.

Thus, we went a little further and in addition to the suggestion itself, we also performed a series of extremely useful exercises for those who are in the first contact with various mathematical notions. It would be convenient for us to include and insist more on the educational stages in the future, to expose more topics that link philately with technologies. Regarding the applications proposed so far, they have several limitations; The vast majority of tests have a small number of questions/requirements, and the free version of the Kahoot® application extends the limitation to the answer options as well - two or four possible correct answer options.

4. CONCLUSION

The combination of an application for assessing the acquisition of knowledge, such as the Kahoot® platform, with pictorial elements such as philatelic materials, shows that new ways of working can be achieved. These can be based on both state-of-the-art technology and a less natural part, as thematic philately is considered, pedagogically speaking. All that is needed is a series of digital skills, implicitly the knowledge of such support platforms, as well as the curiosity to adapt a passion (as it is most often considered philately) to the educational activity.

Through this study, we wanted to show that a new form of education, as a mixt between mobile application and thematic philately, can be achieved through play. Regardless of the instructor's concerns, play education is as permissive as possible. He/she can opt for many variants of work, he can combine his passion for technology, even what is topical with what was once topical. The resulting exercises can be successfully applied to the primary cycle and to higher education levels, where the mathematical notions, in this case, must be carefully and judiciously taught.

Regarding the testing of the application, the tests were completed by a limited number of children (10-15 so far), who said they were excited. Another feedback, not to be neglected, I accessed by actually working with the Kahoot® platform, from the perspective of actually creating the tests. What would be interesting to follow in completing this study are the possibilities of implementing other topics, from various other areas of interest, possibly even opening the platform to the version proposed by STEM education. Equally, we consider that such work proposals would be not only interesting for teachers, but especially unique for students who love to play the game being essentially in childhood.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sdiarticle4.com/review-history/67766