

ORIGINAL ARTICLE

A DIALOG ON ORGAN AND TISSUE DONATION: GAMIFICATION IN PERMANENT EDUCATION IN HEALTH

HIGHLIGHTS

1. We noticed certain weakness in knowledge about the theme among the workers.
2. Our strategy inspired engagement and motivation in the teaching-learning process.
3. We discovered the potential of gamification in permanent education in health.
4. We emphasize the importance of professional nurses as educators.

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ABSTRACT

Objective: to systematize the teaching-service partnership experience in the creation and application of a virtual game on organ and tissue donation as a proposal for permanent education in health. **Method:** systematization of an experience, conducted through documentary analysis, involving the process to create and apply an educational gamification practice by Nursing students, professors and professionals who developed the strategy and applied it at a university hospital in southern Brazil in September 2020. **Results:** given the health context imposed by COVID-19, the virtual game consisting of 20 questions about the organ and tissue donation process for transplants, as a strategy for ongoing health education, inspired engagement and motivation among the professionals, who showed limited knowledge about the theme and evaluated the strategy as positive. **Conclusion:** a potential path to be replicated in different contexts and scenarios was made evident, stimulating and encouraging the care and education processes.

DESCRIPTORS: Games and Toys; Educational Technology; Nursing Education; Health Personnel; Tissue Donation.

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INTRODUCTION

Brazil holds the largest public transplantation system in the world, although there are still logistic and operational barriers to be overcome by the donation and procurement programs¹. In 2019, the rate of effective donors in the country was 18.1 for every million inhabitants; however, there was a 12.7% decrease when compared to 2020, as a consequence of the COVID-19 pandemic context².

Associated with this, ethical aspects and distrust in the process, lack of understanding of the system, family refusal and lack of social awareness remain as obstacles to donation, contributing to the imbalance between supply and demand of organs and tissues^{1,3}. In this sense, a complex and heterogeneous response is required to mitigate this inequality, encompassing an increase in the number of donors, social sensitization and education of professionals³.

Permanent education in health (PEH) emerges as a political-pedagogical strategy capable of changing the *status quo* of this problem, stimulating the teaching-learning process based on the needs arising from everyday work⁴. Thus, it contributes to personal, social and cultural development based on a (re)signification of the work process, aiming at improving access, quality and humanization of the care provided⁴.

Among the strategies used to develop PEH, educational technologies (ETs) are potential tools to be employed in the educational process⁵. ETs are presented as facilitators of care and health education actions⁶, especially when there is integration of interactive activities with suitable technologies for this purpose, in order to promote interactive learning⁵.

There are various ETs to promote teaching and several apps have been used to improve involvement and engagement in educational moments⁵. The playful approach (gamification) is being increasingly employed with health care users and professionals, facilitating the improvement and transformation of diverse knowledge and practices⁷. These can be enhanced by technology, stimulating the players' motivation and participation⁸.

Despite the wide range of ET-based learning resources, there is still a need for research studies addressing use of these tools to improve and qualify educational models⁹. Therefore, collaborative and continuous efforts are necessary to identify or create appropriate ETs for the promotion of an efficient educational process, which can be supported and facilitated by timely tools⁵.

Based on the aforementioned, it becomes evident that the use of playful elements as ETs emerges as a potential strategy for engaging health care professionals in a dialog about organ and tissue donation, with the aim of transforming the current scenario. Therefore, the objective was to systematize the teaching-service partnership experience in the creation and application of a virtual game on organ and tissue donation as a proposal for permanent education in health.

METHOD

This was a systematization of the experience (SE) research study, anchored in a participatory approach and supported by a constructivist perspective, whose focus was on the critical interpretation of an experience that, duly organized, recorded and reconstructed, allowed for the logical discovery of the experience underwent by the actors involved, enabling an understanding of the intervening factors and their relationships that contributed to the experience unfolding as it did¹⁰.

SE has been a political-pedagogical challenge based on dialogical relationships and in the search for an interpretation of the processes experienced¹⁰. Systematizing experiences is a rigorous exercise that provides an opportunity for reflection and involves identifying, classifying and reorganizing facts, with the experience itself as the study object and critical-theoretical interpretation as the methodological framework, in order to enable the formulation of lessons and knowledge production¹⁰.

The central activity of this systematization was carried out in a hospital linked to a state public university located in southern Brazil, during the week of the Green September campaign in 2020. The initiative originated from the Tutorial Education Program (*Programa de Educação Tutorial, PET*) of the Nursing course and the Intra-Hospital Commission for Organ and Tissue Donation for Transplants (*Comissão Intra-Hospitalar de Doação de Órgãos e Tecidos para Transplantes, CIHDOTT*), both linked to the educational institution.

A total of 12 undergraduate Nursing students, a professor (PET tutor) and nurses from CIHDOTT took part in creation and application of the game. The strategy was developed in three days with health professionals from the hospital who were present at the application moment and accepted to participate in the game. After the activity, the players were invited to anonymously answer a feedback form about their participation.

The five SE moments were followed to guide this study, namely: The starting point; The initial questions, Recovery of the process experienced; Underlying reflection; and The arriving points (Figure 1)¹⁰. For this purpose, documentary analysis (DA) was used, which allowed searching diverse information in documents that addressed recording of the activity, providing a detailed and in-depth understanding of the facts under investigation¹¹.

The starting point

- It was grounded on the assumption of participation and of recording the experience. It is understood that systematization of an experience can only be carried out by those who have actually been part of it. Furthermore, it is indispensable that such participation has been documented in countless ways that allow extracting the necessary information.

The initial questions

- The actual systematization process was initiated, taking into account three recommendations: Why did we want to systematize (objective)?, Which experiences did we want to systematize (object)?, and Which central aspects we were interested in systematizing (axis)?. Thus, the meaning of systematization was defined, the experience was delimited and the guiding thread of the moment was anchored.

Recovery of the process experienced

- The systematization was deepened, emphasizing the descriptive aspects of the experience based on the story reconstruction and on sorting and classification of all the information. A global view of the experience in chronological order was contributed, determining the different elements involved, especially regarding the aspects around the axis.

Underlying reflection

- It referred to the critical interpretation of the process experienced, guided by the following element: Why did what happened happen? This stage corresponded to the key systematization moment. This was an abstraction process (analysis, synthesis and critical interpretation) to find a reason for what happened in the experience, by means of a script with critical questions.

The arriving points

- Conclusions and interpretations learned from the experience were formulated. In this logic, the interpretive reflection on the previous moment resulted in the formulation of clear conclusions, both theoretical and practical, regarding systematization of the experience, which need to be disseminated to facilitate sharing of the lessons learned.

Figure 1 - Methodological path corresponding to the five moments followed in this systematization of the experience. Maringá, PR, Brazil, 2022

Source: The authors (2020), adapted from Holliday (2006).

Meeting the ethical aspects, this research obtained a favorable opinion from the Research Ethics Committee (REC), under Certificate of Presentation for Ethical Appraisal (*Certificado de Apresentação para Apreciação Ética*, CAAE) No. 58782222.0.0000.0104 and opinion No. 5,463,871/2022. For being a DA, waiver of the informed consent form was requested. Secrecy of the identification data corresponding to those proposing the activity, to the institution and to the players was preserved.

RESULTS

The starting point was an experience conceived by the PET-CIHDOOT partnership (participants) given the perception about the need for a dialog on the topic with health professionals. Creation and application of the game were documented through notes, field records, meeting minutes and photographs, which were properly archived by PET because it was an ongoing planning action in the group's activity report.

CIHDOOT manages routines and protocols to enable the organ and tissue donation and procurement process within the institution. Development of the PEH activities is part of the framework of actions carried out by the hospital commission where the educational practice was implemented, mainly due to noticing resistance to accept and collaborate with the process from some professionals.

Such being the case, the activity called "Myths and truths: Organ and tissue donation for transplants" was proposed, which would initially be conducted in pairs with a human board game. However, considering the COVID-19 pandemic and the need for social distancing, the proposal was reformulated to be developed individually, while still maintaining the principles of relaxation and intrinsic interaction found in playful activities.

In the initial questions, the theoretical context of the systematization included the experience of the teaching-service partnership in the creation and implementation of an action addressing the organ and tissue donation process (object), with the possibility of contributing to understanding a potential educational practice at the interface with PEH (objective), through critical analysis of the use of playful elements as educational technology throughout this process (axis).

To recover the process experienced, it is noted that gamification was the approach chosen for the practice, which was guided by 20 affirmative questions, described in Chart 1. These questions were developed by those proposing the activity through consultations in the scientific literature and in governmental websites containing the most common questions and doubts of the population regarding the organ and tissue donation process.

Chart 1 - Questions prepared to develop the virtual educational game that comprised the systematized experience. Maringá, PR, Brazil, 2020

Question
For a person to be a donor, it is necessary that they express their will in writing in some document.
Organ donation deforms the body.
Organ donation benefits many people.

After organ donation, the body needs to be buried in a sealed coffin.
Almost all body organs and tissues can be donated.
The donor's family needs to bear all the costs related to the donation.
There is at least one religion against organ donation.
People aged over 70 years old cannot be organ or tissue donors.
The age limit to be a cornea donor is 70 years old.
People with hepatitis can donate kidneys or liver.
People in better financial conditions are among the first in the waiting list to receive organs.
Anyone who receives an organ from another person starts to behave and/or act like the deceased.
It is possible that a patient with brain death comes back to life.
All patients with brain death are considered potential donors.
The donor's family cannot choose the recipient for the donated organs.
After the donation, the donor's family can meet the recipient.
In the case of a patient with brain death whose family refuses organ donation, the devices should be disconnected.
Tissue donation is possible after a patient suffers a cardiac arrest.
Definite tattoos and makeup are absolute contraindications for organ donation.
A transplanted patient that suffers an accident or dies can donate the organ(s) they received in their own transplant.

Source: The authors (2020).

With the questions in hand, the game was created in a virtual app. For such purpose, the Kahoot® educational tool based on games was used, allowing the creation of a test with true or false alternatives, so that the participants could indicate, based on their prior knowledge, whether the information presented in the question was true or a myth.

The game was applied during the work schedule in the morning, afternoon and night shifts, in all of the hospital's sectors. PET developed a game pilot test for prior training of the CIHDOTT nurses, aiming to improve the tool. From there, Kahoot® was installed in tablets and smartphones for its application, conducted *in loco* by CIHDOTT.

Each question should be answered in up to 30 seconds, according to the parameters defined in Kahoot®. Automatically, the tool generated a score (from zero to 1.000) calculated based on the difference between the time the player spent reading each question and selecting the answer. In this way, scores were assigned to the participants for each question they answered correctly.

At the end of the game, each participant was told the correct options and Kahoot® classified them in a ranking of players. This ranking was used to reward the three best participants from each professional category (health, administrative and general services). Subsequently, the players were invited to answer an electronic questionnaire with descriptive and feedback data about the strategy.

The game was applied to 229 professionals aged from 20 to 61 years old. In relation to the categories, 124 (54.1%) were health professionals, 74 (32.4%) worked in the administrative sector, and 31 (13.5%) did so in general services. 191 (83.4%) of the participants knew how to conceptualize CIHDOTT and 183 (79.9%) were aware of some

duty/role of the commission in the hospital.

The overall mean of correct answers was 65.0%, which represents 13 correct answers per player. In addition, 135 (59.2%) had never participated in any course or activity on the theme of organ and tissue donation, and 272 (91.0%) expressed an interest in learning more about the topic through the development and implementation of similar strategies to those employed in this systematized activity.

In light of the underlying reflection, it was understood that the motivation for developing the activity stemmed from the mutual interest between PET and CIHDOTT to promote the development of PEH in response to the need to raise awareness about the theme among the health care professionals from the institution. However, a number of challenges were encountered in the way, with the COVID-19 pandemic standing out, forcing the activity to be adapted.

Thus, what initially might have seemed like a barrier ended up surpassing the receptivity expectations, considering the engagement, positive feedback and participation of a large number of professionals. Thus, the potentiality of using gamification in a virtual app was identified, as a facilitating tool in the PEH process around the organ and tissue donation process for transplants.

Based on the arriving points, it is suggested that systematizing the teaching-service integration experience has led to the discovery of a promising playful-technological practice to foster dialog on organ and tissue donation at the interface with PEH. Furthermore, the results arising from this experience may improve the development of educational practices on the topic and support other strategies guided by means of virtual games.

DISCUSSION

ETs have been increasingly used in educational processes, serving as tools for dialog and approach in health⁶, as observed in this research. In professional training and qualification, these technologies have proved to be effective in providing continuous improvement processes for the actors involved, emphasizing practices and knowledge from a multiprofessional perspective¹².

In the PEH context, there is still certain difficulty understanding and distinguishing health education didactic models, which can hinder the educational process facilitated by educational technologies¹³. The actions tend to focus on instrumental conceptions, targeted at isolated, fragmented and disconnected interventions from the reality of the service¹⁴, distancing themselves from the PEH principles.

Despite these barriers, educational strategies guided by technological resources and reflective approaches in a teaching-service integration logic have been developed to implement PEH¹⁴. In this context, Nursing professionals emerge as protagonists and facilitators of the educational processes, as their activities encompass both educational actions in health and health education itself, both of which are involved in PEH¹⁵.

Gamification, which refers to the use of playful elements in non-game contexts, has been employed as an effective tool in learning, promoting positive effects in the cognitive, motivational and behavioral domains^{16,17}. It is extremely beneficial in contexts where learning can be supported, motivation can be enhanced, and behavioral changes can be elicited¹⁷.

In the development of educational actions for prevention or promotion, especially those associated with digital apps such as the one in this study, gamification has emerged as a valuable strategy, especially because it enables and increases the participants' engagement and participation in the activities¹⁷. In addition, playful practices can even

provide opportunities for professional training and qualification¹⁶, unveiling a potentiality for PEH.

In the dialog with organ and tissue donation, developing PEH practices becomes indispensable because there is a deficit in health professionals' knowledge about the topic¹⁸. From this perspective, gamification emerges as an approach that aims at disseminating conscious knowledge, which represents a *sine qua non* condition to transform the *status quo* of this problem¹⁹.

In this scenario, it is inferred that, in order to reduce waiting lists and increase donor rates, the organ and tissue donation process should be emphasized in all contexts and through different approaches, transforming and deconstructing the impeding factors related to individual attitudes, social structures, cultural aspects and religious beliefs that surround the reality of the process^{20,21}.

Given the above, and considering the findings of this systematization, a promising strategy for the development of PEH on the theme emerges from innovative and participatory ETs proposed by the teaching-service partnership, which can exert positive effects for health professionals and society. Duly prepared professionals are also health educators and articulators of this process, together with the health services and the population.

However, it is important to note that, for being a research study on the systematization of an experience, the depth and scope of the results are limited, mainly because they focus on the perceptions of those proposing the activity and do not extensively survey the real transformations in work practices regarding the topic, based on the experiences underwent and the lessons learned from the approach that was developed.

FINAL CONSIDERATIONS

Systematizing the teaching-service partnership experience involving a playful-technological practice for dialog on organ and tissue donation at the interface with PEH has evidenced a promising path to be replicated in different healthcare and educational contexts, stimulating and encouraging the care-educational process with the objective of transforming the reality of this problem.

It is noted that it was fundamental to articulate and include Nursing professionals in conception of the activity, as they were involved in the creation and implementation of the virtual game. Thus, the leading role of Nursing in the PEH scope is emphasized, acting as the cornerstone in the actions focused on improving the work processes by problematizing the reality experienced.

In addition, it is expected that the results described reach and inspire the professionals responsible for developing PEH, as they show an innovative virtual possibility guided by gamification, which should not be solely limited and restricted to the theme of this study. Finally, it is suggested to conduct further studies to assess applicability and effectiveness of the practice as a didactic tool.

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Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work - **Lima LV de, Pavinati G, Baldissera VDA**. Drafting the work or revising it critically for important intellectual content - **Lima LV de, Pavinati G, Gonçalves L de AR, Corsi CAC, Cabianchi EC, Freitas RA de, Baldissera VDA**. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved - **Lima LV de, Baldissera VDA**. All authors approved the final version of the text.

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