

Playful technologies for adolescents used by health professionals: an integrative review

Tecnologias lúdicas para adolescentes utilizadas por profissionais de saúde: revisão integrativa

Tecnologías lúdicas para adolescentes utilizadas por profesionales de la salud: una revisión integradora

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Abstract: Objective: identify the playful technologies used by health professionals for adolescents. **Method:** Integrative review. The databases were: Lilacs, Bdenf, Cinahl, Adolec, Cuiden and Pepsic; SciELO, Cochrane library and Medline / Pubmed. The descriptors extracted from DeCS and MESH, being the final sample of five original articles. Search period from November 2017 to January 2018. **Results:** the articles featured a digital game, a straight chat game, questions and answers, the culture circle, a domino and a card game. They were between the years 2009 to 2018. The level of evidence six with methodological rigor category A. **Final considerations:** despite the articles being aimed at teenagers, there is still a need to develop new playful technologies by health professionals, covering other diseases for this audience, these being protagonists of the teaching-learning process, but also multipliers of health education actions.

Descriptors: Technology; Adolescent; Learning

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Resumo: Objetivo: identificar as tecnologias lúdicas utilizadas pelos profissionais de saúde para adolescentes. **Método:** revisão Integrativa. As bases de dados foram: Lilacs, Bdenf, Cinahl, Adolec, Cuiden e Pepsic; SciELO, Cochrane library e Medline/Pubmed. Os descritores extraídos do DeCS e MESH, sendo a amostra final de cinco artigos originais. Período da busca de novembro de 2017 a janeiro de 2018. **Resultados:** os artigos apresentaram um jogo digital, um jogo papo reto, perguntas e respostas, o círculo de cultura, um dominó e um jogo de cartas. Estavam entre os anos de 2009 a 2018. O nível de evidência seis com rigor metodológico categoria A. **Considerações finais:** apesar dos artigos estarem voltados para adolescentes, ainda há uma necessidade de se desenvolver novas tecnologias lúdicas pelos profissionais de saúde, abrangendo outras doenças para esse público, sendo estes protagonistas do processo ensino-aprendizagem, mas também multiplicadores das ações de educação em saúde.

Descritores: Tecnologia; Adolescente; Aprendizagem

Resumen: Objetivo: identificar las tecnologías lúdicas utilizadas por los profesionales de la salud para adolescentes. **Método:** revisión integradora. Las bases de datos fueron: Lilacs, Bdenf, Cinahl, Adolec, Cuiden y Pepsic; SciELO, biblioteca Cochrane y Medline / Pubmed. Los descriptores extraídos de DeCS y MESH, siendo la muestra final de cinco artículos originales. Período de búsqueda de noviembre de 2017 a enero de 2018. **Resultados:** los artículos presentaron un juego digital, un juego de chat directo, preguntas y respuestas, el círculo cultural, un dominó y un juego de cartas. Fueron entre los años 2009 a 2018. Nivel de evidencia seis con categoría de rigor metodológico A. **Consideraciones finales:** aunque los artículos están dirigidos a adolescentes, aún existe la necesidad de desarrollar nuevas tecnologías lúdicas por parte de profesionales de la salud, que cubran otras enfermedades para este público, siendo estos protagonistas del proceso de enseñanza-aprendizaje, pero también multiplicadores de las acciones de educación para la salud.

Descritores: Tecnología; Adolescente; Aprendizaje

Introduction

Playfulness is the study and practice for facilitating learning, and improving performance through interaction, creation, use and organization of technological processes and resources.¹ The changes caused by the use of educational technologies generate the need for skills that, until then, were not essential, but should be developed by individuals.²

In this context, educational technology is one of the paths of the educational process of children and adolescents and should be inserted in classroom activities, as a tool and not just as a way to automate these processes, as this assumes the production of new knowledge and not only its reproduction in the teaching-learning

process.³ In this phase of adolescence, in which the transition from childhood to the adult world occurs, it is a stage of life marked by a complex process of biopsychosocial and spiritual growth and development, there is a greater need to develop tools through new technologies that reach the student of this age group, so that they feel participatory, active subjects of this process.⁴

In this life cycle, several peculiarities arise, such as the performance of new social roles, the change in the relationship of dependence on the family, as well as choices of life projects and doubts about the biological transformations that occurred as a result of puberty.^{4,5} This contributes to the exposure of situations of risks and vulnerabilities, which generate demands for health care and, may imply in the physical, cognitive, social development that affect the process of building citizenship.

In this phase, the interest in new knowledge and learning increases, impelling them to seek these understandings in a peculiar way.⁵ The use of technologies, on a daily basis, instigates educators and other professionals, linked to the area, to investigate how integration occurs in the learning processes. Among the various technological resources, present in the school, the game is one that causes the greatest interest and motivation to students.⁶

In the health area, games are considered educational instruments potentially capable of contributing both to the development of education and to the construction of knowledge in health. It is seen as a fun, stimulating, interactive, innovative and illustrative activity that answers the dual task of clarifying doubts and facilitating learning. The game, as an educational technology, is one of the activities that improves the creativity of those involved and provides pleasant learning environments, necessary to emerge potentials that facilitate the dynamization of the educational context and the construction of knowledge based on reality.⁶

The association of educational technology with playfulness requires providing learning using games and games. Teaching using playful means creates a rewarding and attractive environment, providing encouragement for the individual's integral development.⁷ All the tools can be used, however, the playful technology, must be evaluated in its integration with the educational practices in order to meet the needs and interests of the target population, and promote a cohesive teaching-learning moment.

The multiple media from the book to the internet allow the use of different languages and new forms of communication. An increasing number of schools and education centers are using online and collaborative tools for learning and searching for information.⁸ Knowledge facilitator, mediator in the construction of mental structures, and as a "cognitive tool" mediating the learning process.⁹

It can be emphasized that people are immersed in a knowledge society characterized by the development of innovations in information and communication technologies (ICTs). The health sector needs new technologies that can expand knowledge and empower the community through health training. As an example, tele health networks, the use of educational software, virtual reality, the use of computers for simulations, the use of the internet and its facilities are highlighted.¹⁰

The game as an educational tool, besides being sources of pleasure and discovery for the participants, is also a way of translating the socio-historical context, reflected in the culture, which significantly contributes to the process of critical construction of the participants' knowledge. Learning through play enriches worldviews and stimulates the relationship between peers, constituting a process of exchange of experiences and socialization.¹¹

The playful technologies used in the classroom as a learning tool, associated with playing in the construction of knowledge, add values, motivation, and exchange of experiences, exposes difficulties, interaction and questions, in addition to observing behaviors that were not previously exposed. The educator, in principle, will be the mediator, facilitator in this process. Later, these students will be able to walk alone, in the propagation of this knowledge among their peers, at that moment health education happens when it allows the transformation of this subject.¹²

In this perspective, the active participation of these adolescents, their knowledge, is essential elements in health promotion and prevention actions. The use of playful technologies for adolescents encourages arguments, reflections and collective construction of knowledge among them.¹³

Health professionals must pay attention to the creation of health education strategies so that adolescents are able to know the practices that reiterate the historical and social aspects of the health-disease process. Proposing an educational action that has an emancipatory character of empowerment, constituting, in this way, a movement to understand reality and health care in order that some diseases, when diagnosed early, can be cured, but when it is not possible, it should propose conditions to improve the quality of life.¹⁴ In this perspective, the objective of this integrative review was to identify the playful technologies used by health professionals for adolescents.

Method

This is an integrative review type study. Among other review methods, the integrative review is the most extensive, being an advantage, as it allows the simultaneous inclusion of experimental and non-experimental studies providing a

complete understanding of the analyzed phenomenon. This method also allows for the combination of data from theoretical and empirical literature. Thus, the reviewer can prepare an integrative review with different purposes and purposes.¹⁵⁻¹⁶

To carry out the study, six distinct steps were taken: 1 - Elaboration of the theme and the research question; 2 - Elaboration of the eligibility criteria and search for studies in the literature; 3 - Categorization of studies and data extraction; 4 - Evaluation of selected studies; 5 - Analysis and interpretation of results; 6 - Description of results and discussion.¹⁷

Regarding the eligibility criteria, the following were included: original articles, published in Portuguese, English or Spanish. There was no time frame of the publications identified. Works in the form of a thesis, dissertation, book or book chapter, editorial, newspaper article, integrative or systematic literature review, letter to the editor, reflective study, experience report and previous note were excluded.

It is worth mentioning that although the Cochrane library has as main objective the publication of articles from Systematic Reviews, it was included in the search strategy for the selection of articles, as it is a library that also stores original articles. This was confirmed in the last crossing performed, in which three original articles were found, but were not included in the final sample, as they did not answer the research question.

The search strategy took place in six databases: LILACS; BDENF; CINAHL; ADOLEC; CUIDEN and PePSIC; two COCHRANE LIBRARY libraries; and the PubMed portal that includes MEDLINE, a SciELO electronic library, in which only original articles that were published in indexed journals and answered the research question were considered as selection criteria. The search was carried out from November 2017 to January 2018. The intersections were extracted from the Health

Science Descriptors (DeCS) and from the Medical Subject Headings (MeSH). The descriptors in Portuguese were used: Technology; Health professionals; Adolescent; Learning. English: Technology; Health Personal; Adolescent; Learning. Spanish: *Tecnología; Profesional de Salud; Adolescente; Aprendizaje*. Thus, the crossing between the aforementioned descriptors was performed using the Boolean operator “AND”.

For this research, six crossings were performed with the descriptors of DeCS and MeSH:

1. Technology AND Adolescent;
2. Learning AND Health Professional;
3. Learning AND Adolescent;
4. Technology AND Health Professional AND Adolescent;
5. Learning AND Health Professional AND Adolescent;
6. Technology AND Health Professional AND Adolescent AND Learning;

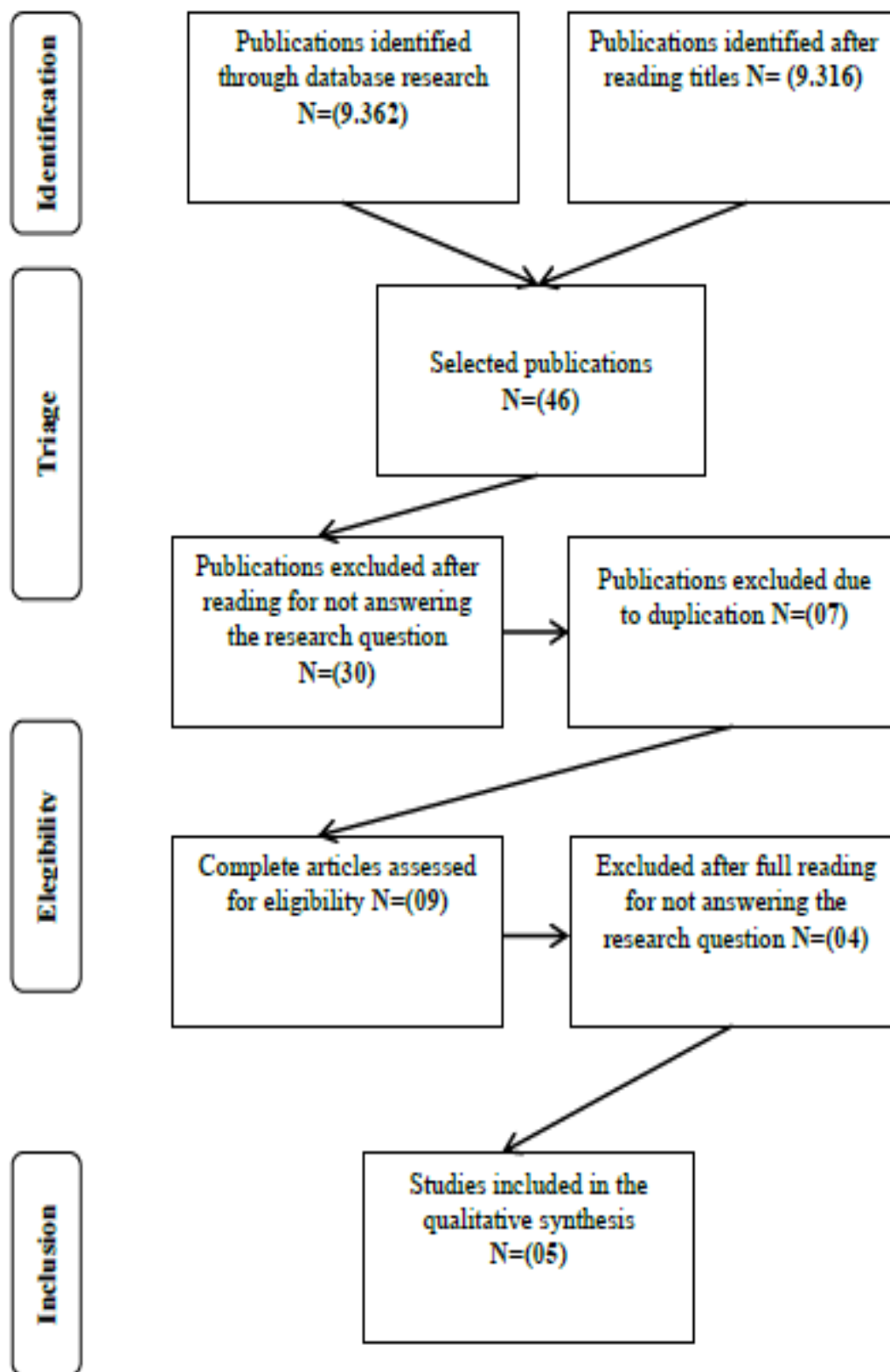
Of these crossings, the quantitative ones were identified: 2,453 articles in the 1st crossing; 917 articles at the 2nd crossing; 4,858 articles at the 3rd crossing; 424 articles at the 4th crossing; 669 articles at the 5th crossing; 41 articles in the 6th crossing, making a total of 9,362 articles found in the different databases, in English, Portuguese or Spanish (Chart 1).

Chart 1 - Selection of articles in the databases by crossings. Recife-PE, 2018.

BASES	TOTAL BY CROSSINGS						GENERAL TOTAL
	1º	2º	3º	4º	5º	6º	
LILACS	00	00	00	00	00	00	00
BDENF	00	00	00	00	00	00	00
CINAHL	690	175	1.923	224	08	01	3.021
ADOLEC	00	00	00	00	00	00	00
CUIDEN	69	111	32	107	03	00	322
MEDLINE/ PubMed	467	46	373	55	611	37	1.589
PePSIC	00	00	00	00	00	00	00
SciELO	80	348	00	00	00	00	428
COCHRANE Library	1.147	237	2.530	38	47	03	4.002
TOTAL	2.453	917	4.858	424	669	41	9.362

After identification, the selection of primary studies was carried out, according to the question: what play technologies are being used by health professionals for adolescents? And the eligibility criteria defined. All studies identified, using the search strategy, were initially evaluated from the analysis of the titles, followed by the abstracts. In cases where the titles and abstracts were not comprehensible to define the initial selection, the selected articles were read in full. As shown in the flowchart in Figure 1.

Figure 1 - Flowchart with the results of the selection of the selected articles according to the eligibility criteria, Recife-PE, 2018.



Source: Adapted from the model Prisma, 2009.

The studies were evaluated for the level of evidence using the methodological approach that considers seven levels according to their classification: Level I - Systematic Review with or without meta-analysis of all randomized clinical trials; Level II - Randomized Clinical Trial, well designed; Level III - Well-designed clinical trial, but without randomization; Level IV - Cohort and Case-Control Studies; Level V - Studies originating from a systematic review of descriptive and qualitative studies; Level VI - Evidence derived from a single descriptive and qualitative study; Level VII - Evidence from the views of authorities and / or expert committee reports.¹⁶⁻¹⁷

The five articles that made up the final sample, submitted to rereading, used the adapted validated form, composed of topics that covered the main questions of the articles.¹⁷ For the methodological rigor of the research applied in the analysis of the publications found, the instrument adapted from the Critical Appraisal Skills Program (CASP) this instrument classifies the studies as: of good methodological quality and reduced bias (category A - 6 to 10 points), and with quality satisfactory methodological approach (category B - at least 5 points). All five articles were in category A of methodological rigor. After these analyzes, the relevant information was gathered in a summary table.¹⁷

The most found technologies were the soft-hard ones, among them a domino game, card game, workshops with a culture circle in which “the fanzine” emerged, all these technologies aimed at teenagers.

Results

Of the final five articles, two in SciELO (Sexuality: theoretical and methodological reflections;¹⁸ healthy eating habits for teenagers);¹⁹ two at CINAHL

(Health education in a public school; ²⁰ STD / AIDS) ²¹ and one at CUIDEN (Sexuality for adolescents).²²

Regarding the year of publication, they were between the years 2009 to 2018. Four studies were produced in Brazil and one in Catalunya - Barcelona- Spain. Regarding the language, four were written in Portuguese and one in Spanish.

The journals in which the publications were presented, three were related to the nursing area, all focused on the knowledge of adolescents, regarding healthy eating habits, sexuality and sexually transmitted diseases, two addressed the use of technologies as a tool for the teaching- learning, content focused on education such as the culture circle supported by Paulo Freire's pedagogical model, widely used by health professionals when health education actions are developed, especially in Primary Care. And the second addressed the perception of education professionals, parents and students in relation to technologies, as a tool in the teaching-learning process. The levels of evidence according to the classification system used were all at level VI. As for methodological rigor, all surveys obtained good methodological quality and reduced bias, falling within the scores of eight to ten.

Chart 2 shows a summary of the information found in the selected articles.

Base/Author/Year	Title	Objective	Method / Level of Evidence	Results
SciELO/Souza et al/2017. ¹⁸	The game as a strategy to approach sexuality with adolescents: theoretical and methodological reflections	Describe the game Papo Reto and reflect on its theoretical and methodological bases	Analytical study on the process of preparing the online game Papo Reto for 60 teenagers. With a predominant age group of 18 years old, all from public schools, two schools were selected: one in Belo Horizonte and the other in São Paulo. Level of evidence: VI	Four reflective categories were extracted: 1 - The game as a pedagogical device; 2- Simulation of realities; 3 - Device for inventive learning; 4 - The game enhances interaction. Thus, the game allowed them to be creative, active in creating discourse and ways of thinking, feeling and acting on sexuality.
SciELO/Carme Carrion et al/2016. ¹⁹	Use of cell phones to promote healthy habits in adolescents. Study with focus groups .	Explore the perceptions, values, attitudes and preferences of adolescents, parents and teachers about the use of mobile technologies to promote healthy lifestyles.	Exploratory, descriptive study with a qualitative approach. Convenience sampling, carried out in two stages: the first is the selection of schools; the second, the choice of the 30 participants who formed three groups between eight and ten participants. Level of evidence: VI	Four categories of focus groups emerged: social and cultural framework; adolescent and health; the role of technology in the lives of adolescents; use of technology to acquire healthier habits. Subcategories linked to the nexus between adolescents and health emerged.
CINAHL/Gubert et al/2009. ²⁰	Educational technologies in the school context: health education strategy in a public	Address the use of educational technologies as a health education strategy for adolescents in the school context.	Action research study, from a qualitative perspective, supported by Paulo Freire's Pedagogical Model - Culture Circle. Held with 30 high school students from a public school in Fortaleza, aged 14 to 18	In this context, health professionals must produce new technologies that favor the health education process in the prevention of

	school in Fortaleza - CE		years. Level of evidence: VI	STDs and AIDS. At the end of the workshops, the creation of a new educational technology “O Fanzine” emerged.
CINAHL/Barbosa et al /2010. ²¹	Educational game as a health education strategy for adolescents in STD / AIDS prevention	Report the use of educational games as a health education strategy for adolescents	Descriptive exploratory study developed in a public school in Fortaleza - CE, with 85 adolescents between the age group of 14 to 19 years. The game used was dominoes, along with the observation of the participant, the observational protocol, the pre and the post-test. Level of evidence: VI	In the pre-test, he noticed the adolescents' lack of knowledge in the use of condoms; In the post-test, the effectiveness of participatory educational action was verified. It became clear the importance of the educational game as a process of formation, reflection, interaction and group participation. Where they were able to fill in the gaps and interact with others, facilitating the teaching-learning process.
CUIDEN/ Souza et al / 2018. ²²	Validation of an educational game about sexuality for adolescents	Validate educational game about sexuality for teenagers	Methodological study of content and appearance validation. Developed in stages: definition of themes; goals; game design and content and appearance validation. Level of evidence: VI	The card game presented a Content Validity Index and a 93% appearance, the material is approved as educational health education practices for adolescents. This being

				another educational technology that can be used by health professionals for adolescents
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Chart 2 - Characterization of studies analyzed according to author, database and year of publication, title, objective, method, level of evidence and main results. Recife-PE, 2018.

Discussion

In the construction of this review, several articles were found that addressed educational technologies; however few focused on actions with adolescents. This refers to a scenario of how health education is being worked with this population.

The knowledge produced and published on the theme, playful technologies used by health professionals, presented a representative share of Brazilian production, of the five selected researches, four were produced in Brazil, published in indexed national journals.^{19,22} This fact shows that Brazil has participated in the development of knowledge about the use of new technologies in the teaching-learning process.

Playfulness is the use of design techniques that use games to enrich diverse contexts, usually not related to games, but to the content that teenagers can learn through this tool. Of the analyzed publications, all portrayed the importance of playfulness in the teaching-learning process for children and adolescents, as it motivates reflection, participation and discussion in an interactive way.^{18,22}

The mobile technology used for knowledge about healthy eating habits demonstrated the interest of adolescents in the development and changes in these habits and in self-esteem for the use of technology.¹⁹

Technology becomes an important educational tool in the process in which these adolescents become protagonists, expressing their own questions, anxieties, doubts, myths and truths in problematizing situations, without the requirement of a specific learning or conduct by the educator. The construction of this knowledge comes from a shared action, in a behavioral way and that this social interaction becomes an indispensable condition for the teaching-learning process.¹⁹

In this process of learning and associated technologies, teenagers will be able to create their technology, as an example, if there was this study, in which they created “the fanzine”

feeling they are protagonists of this action-interaction.²⁰ The need to create listening spaces in schools and health services for adolescents is perceived, which allows a credible bond established by health and education professionals, thus providing qualified listening.^{21,22}

Educational technology, although challenging, can perform an action between information, debate, reflection and group participation, but adolescents must understand this relationship between education, creative and innovative process in the construction of learning so that the knowledge is completed as that it is placed dynamically, fearlessly, committed and that there is engagement.²¹

The main pedagogical characteristic of the game is to favor an educational activity based on the theoretical framework with a dialogical approach in the health education process, thus seeking to distance itself from the traditional teaching methodology, in which the educator only deposits knowledge in the mind of the student. Given the above, the dynamics of the game sought to encourage the active participation of adolescents in the construction of knowledge.²²

This active participation of adolescents in probing their knowledge is an essential element in health promotion actions. The use of games is presented as an instrument of the health educational process that favors participation, debates and exchange of experiences, from a critical perspective in relation to traditional education.^{18,22}

In the encounter between technologies, games and education, an autonomous education based on the dynamics of games is feasible, without restraining a libertarian, spontaneous and insubordinate character. The use of educational games for adolescents has shown that playful and participatory work fosters arguments, reflections and collective construction of knowledge among themselves. When proposing a game as an educational activity, the voluntary character of the game is submitted to the objectives of the learning process, with the objective of making it merely an instrument, tool or teaching technique. By subordinating itself to any interest other

than itself, the game may lose what best defines it as a principle, that is, the rebellion to the purposes of utility and production.²³

In this context, games are excellent health education strategies, a unique tool for health promotion, so it is necessary to improve this practice with health professionals, encouraging the elaboration of active methodologies that break paradigms between what you know and another who does not know, but rather to realize that there are different types of knowledge that complement each other as they are inserted as strategies in the teaching-learning process.²⁴

Although there are controversies, authors reinforce the importance of educational technology in the teaching-learning process, not to complement, but as an essential part of this process. The essential thing is that the educator, as well as the student, can be pleasantly involved in this continuous construction of teaching and learning, using these pedagogical tools that are renewed and reinvented as the protagonists allow themselves.

Final considerations

The research corroborates for health and education professionals to realize the importance of this health-education-technology triad in the teaching-learning process, with the school being a crucial space in this interaction, communication, and dialogue and listening. The school adolescent spends most of their time at school; this environment must be pleasant, interactive, creative, attractive and receptive.

With technological advances and new paradigms in teaching models, active methodologies favor this comprehensive field by referring to various models of learning, in the construction, development and application of new educational technologies in health and education. From the perspective of an interaction between these two professionals in the process of educational health actions, as is the case of the School Health Program- SHP, which makes health education viable as a teaching-learning strategy in the development of adolescents

as the subject protagonists of this action. And, who can be involved in this process in a pleasurable, reflective, constructive and interactive way, acquiring and taking knowledge beyond the classroom.

In this context, it is necessary to build technologies to promote the health of adolescents covering the different areas of health, in order to bring knowledge and empowerment in this important phase of discoveries, development and growth of adolescents, concomitant with the teaching-learning process.

The limitations of the study refer to the sample not having used the double-independent quality criterion in the selection and extraction of articles. However, they managed to answer and achieve the objective proposed in the research.

References

1. Viva MAA, Vianna PBM. Entre nativos e imigrantes digitais: um estudo na educação superior. Rev Cesuca Virtual [Internet]. 2013 [acesso em 2018 jan 12];1(2). Disponível em: <http://ojs.cesuca.edu.br/index.php/cesucavirtual/article/view/584>
2. Martins RX, Fátima FV. A implantação do Programa Nacional de Tecnologia Educacional (ProInfo): revelações de pesquisas realizadas no Brasil entre 2007 e 2011. Rev Bras Estud Pedagog [Internet]. 2015 [acesso em 2017 nov 08];(96)242:112-28. Disponível em: http://www.scielo.br/scielo.php?pid=S2176-66812015000100112&script=sci_abstract&tlng=pt
3. Almeida MEBA, Valente JA. Tecnologias e currículo: trajetórias convergentes e divergentes? São Paulo: Paulus; 2011.
4. World Health Organization (WHO). Young people's health – a challenge for society. Report of a who study group on young people and health for all. Tech Rep Ser 731. Geneva: WHO; 1986.
5. BRASIL. Lei nº 8.069, de 13 de julho de 1990. Dispõe sobre o Estatuto da Criança e do Adolescente e dá outras providências. Brasília (DF): Presidência da República; 1990.
6. Kishimoto TM. Jogos, brinquedos e brincadeiras do Brasil. Espac Blanco, Ser Indagaciones [Internet], 2014 [acesso em 2018 mar 08]; (24): 10-22. Disponível em: http://www.espaciosenblanco.unicen.edu.ar/pdf/numerosanterior/Revista_Espacios_en_Blanco_N24.pdf

7. Alves L, Bianchin MA. O jogo como recurso de aprendizagem. *Rev Psicopedag.* 2010;27(83):282-7.
8. Blakely G, Skirton H, Cooper S, Allum P, Nelmes P. Educational gaming in the health sciences: systematic review. *J Adv Nurs.* 2009;65(2):259-69.
9. Gubert FA, Vieira NFC, Pinheiro PNC, Oriá MOB, Almeida PC, Araújo TS. Tradução e validação da escala Parent-adolescent Communication Scale: tecnologia para prevenção de DST/HIV. *Rev Latinoam Enferm* [Internet]. 2013 [acesso em 2018 jan 10];21(4):1-8. Disponível: http://www.scielo.br/pdf/rlae/v21n4/pt_0104-1169-rlae-21-04-0851.pdf
10. Silveira RCP, Nagata M, Maia LLQGN, Araújo A, Cavalcante RB. uso de tecnologias da informação e comunicação na educação em saúde de adolescentes escolares. *J. Health Inform* [Internet]. 2012 [acesso em 2018 jan 11];4(4):182-6. Disponível em: https://www.researchgate.net/publication/281784182_Uso_de_Tecnologias_da_Informacao_e_Comunicacao_na_educacao_em_saude_de_adolescentes_escolares
11. Malaquias MS, Ribeiro SS. A Importância do lúdico no processo de ensino-aprendizagem no desenvolvimento da infância. *Psicologado* [Internet]. 2013 [acesso em 2017 abr 02];7(1):16-1. Disponível em: <https://psicologado.com/atuacao/psicologia-escolar/a-importancia-do-ludico-no-processo-de-ensino-aprendizagem-no-desenvolvimento-da-infancia>
12. Lavinias L, Veiga A. Desafios do modelo brasileiro de inclusão digital pela escola. *Cad Pesqui* [Internet]. 2013 [acesso em 2017 dez 07];43(149):542-69. Disponível em: <http://publicacoes.fcc.org.br/ojs/index.php/cp/article/view/2665>
13. Sousa MG, Oliveira EML, Coelho MMF, Miranda KCL, Henriques ACPT, Cabral RL. Validação de jogo educativo sobre sexualidade para adolescentes. *Rev Pesqui Cuid Fundam* [Internet]. 2018 [acesso em 2017 nov 08];10(1):203-9. Disponível em: <http://www.seer.unirio.br/index.php/cuidadofundamental/article/view/6030>
14. Ribeiro MDA, Oliveira SB, Filgueiras MC. Pós-alta em hanseníase: uma revisão sobre qualidade de vida e conceito de cura. *Saúde (Santa Maria)* 2015;41(1):09-18.
15. Souza MT, Silva MD, Carvalho R. Revisão integrativa: o que é e como fazer. *Einstein.* 2010;8(1):102-6.
16. Ganong LH. Integrative reviews of nursing research. *Res Nurs Health.* 1987;10(1):1-11.
17. Ursi ES, Galvão CM. Prevenção de lesões de pele no perioperatório: revisão integrativa da literatura. *Rev Latinoam Enferm* 2006;14(1):124-31.
18. Souza V, Gazzinelli MF, Soares AN, Fernandes MM, Oliveira RNG, Fonseca RMGS. The game as strategy for approach to sexuality with adolescents: theoretical-methodological reflections. *Rev Bras Enferm* [Internet]. 2017 [acesso em 2017 nov 08];70(2):376-83. Disponível em: <http://dx.doi.org/10.1590/0034-7167-2016-0043>

19. Carrion C, Arroyo ML, Castell C, Puigdomènech E, Gómez SF, Domingo L, et al. Utilización del teléfono móvil para el fomento de hábitos saludables en adolescentes. Estudio con grupos focales. *Rev Esp Salud Pública*. 2016;(90)3:1-11.
20. Gubert FA, Santos ACL, Aragão KA, Pereira DCR, Vieira NFC, Pinheiro PNC. Tecnologias educativas no contexto escolar: estratégia de educação em saúde em escola pública de Fortaleza-CE. *Rev Eletrônica Enferm [Internet]*. 2009 [acesso em 2017 dez 10];11(1):165-72. Disponível em: <https://www.fen.ufg.br/revista/v11/n1/pdf/v11n1a21.pdf>
21. Barbosa SM, Dias FLA, Pinheiro AKB, Pinheiro PNC, Vieira NFC. Jogo educativo como estratégia de educação em saúde para adolescentes na prevenção à DST/AIDS. *Rev Eletrônica Enferm [Internet]*. 2010 [acesso em 2018 jan 10];12(2):337-41. Disponível em: https://www.fen.ufg.br/fen_revista/v12/n2/v12n2a17.htm
22. Sousa MG, Oliveira EML, Coelho MMF, Miranda KCL, Henriques ACPT, Cabral RL. Validação de jogo educativo sobre sexualidade para adolescentes. *Rev Pesqui Cuid Fundam [Internet]*. 2018 [acesso em 2017 nov 08];10(1):203-9. Disponível em: <http://www.seer.unirio.br/index.php/cuidadofundamental/article/view/6030>
23. Pires MRGM, Guilhem D, Göttems LBD. Jogo (in)dica-SUS: estratégia lúdica na aprendizagem sobre o Sistema Único De Saúde. *Texto & Contexto Enferm*. 2013;22(2):379-88.
24. Yonekura T, Soares CB. O jogo educativo como estratégia de sensibilização para coleta de dados com adolescentes. *Rev Latinoam Enferm [Internet]*. 2010 [acesso em 2017 dez 10];18(5):1-7. Disponível em: http://www.scielo.br/pdf/rlae/v18n5/pt_18.pdf

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