Gamification, a possible alternative using the liveworksheets.com platform

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ABSTRACT
The planning of didactic activities should guide the pedagogical strategies for a quality education, which significantly assists the teaching-learning process, and in this context, an alternative to the learning processes are the educational games and the playful inserted in the educational scenario is a process capable of motivating the pedagogical action. Liveworksheets.com is a platform that allows you to transform traditional printable sheets (pdf, jpg, png) into interactive exercises with self-correction, called "interactive spreadsheets". The objective of this work is to present the versatility of the educational platform – Liveworksheets.com, directed to the elaboration of games, such as word hunting and crossword puzzles. The analysis was based on the spreadsheets available on the platform itself, being exploratory research of bibliographic character. The platform allows you to develop word hunting and crossword puzzle games without major difficulties. In the end it was possible to verify that the platform besides being dynamic and interactive can provide opportunities for changes in the way of teaching and learning, making it possible to transform fun into learning.

Keywords: Education, playful, game, technology, interactivity.

1 INTRODUCTION

In the current scenario in which education is found, it is essential that the planning of didactic activities guide the pedagogical strategies for a quality education, which significantly assists the teaching-learning process (LIMA et al., 2021). Expository classes in excess, are not attractive to part of the students, cause the loss of motivation, and consequently compromise learning, thus, attractive teaching strategies that encourage the protagonism of the student in the classroom, accompanied by appropriate resources, such as playful, are recognized as mechanisms capable of motivating learning (BERNARDES, 2021).

The way of teaching and learning is undergoing important changes, and in this current context the different technological resources are a great ally of teachers. Many students have in their hands cell phones that are small computers and the teacher's challenge is to make his class attractive and bring the attention of these students to the subject taught. The COVID-19 pandemic has made this discussion rekindle for new methodological approaches that have been experienced with blended teaching, the flipped classroom and information and communication technologies to support learning (SILVA et al., 2019).

Benedetti Filho (2013) explains that the current discussions about the dynamics of teaching disseminated in both basic and higher education show the need to develop teaching and learning strategies addressing themes that reflect experiences, interests, needs of students, and use didactic resources that explore their affective, psychological, and sensory aspects. In this aspect, the playful activities have gained space as a strategy to mediate in a dynamic and motivating way, the teaching and learning process. This is reflected in society's debates about our model of teaching and how this process translates into learning. There is much discussion about "traditional teaching" related to the deficiencies, weaknesses, and difficulties of current teaching, seen as negativist and insufficient (SILVA; SALES; ALVES, 2018).

An alternative to the learning processes are the educational games, the playful that different from the traditional learning that has in the textbook the main resource, the playful activities enable the development of important cognitive skills, with tools that allow, the process of construction of knowledge effectively in the different areas of knowledge, is something that deserves attention of educators in the educational scenario, gamification is an instrument capable of motivating action, promoting learning (PIRES et al., 2019).

According to Benedetti Filho (2013) crosswords or crosswords are increasingly being used as didactic tools, and this is motivated by the fact that games stimulate curiosity, creativity, reasoning, according to Antunes et al. (2017) the word search game or letter soup, is a great ally for educational practice, reasoning, memorization and to stimulate reading. It is a game that associates knowledge with play, being a tool capable of enabling pleasurable and effective learning.

The objective of this work is to present the versatility of an educational platform – Liveworksheets.com, little known in the national academic environment, but which has a pedagogical potential that allows successful results for the classroom dynamics.

It will be addressed in this work, among the numerous possibilities of the platform, those directed specifically to the elaboration of word hunting and crossword puzzles.

2 THEORETICAL REFERECIAL

Digital information and communication technologies (DICT) in educational environments have the potential for better learning, since these tools are part of the daily life of the entire school community. The TDICs in education have a relevant role and contribute significantly in learning, as it can instigate and motivate the student, increasing the effectiveness in the process of teaching and learning and thus the improvement of this process (LIMA, 2021).

The platform Liveworksheets.com allows you to transform printable sheets (pdf, jpg, png) into interactive and self-correcting exercises, called "interactive sheets", that is, through the platform you can transform traditional games such as crosswords and word search into games, where the student can respond on the platform itself or by other platforms such as Google Classroom, Microsoft Teams, WhatsApps (Liveworksheets.com).

The term "gamification" or *gamification* (Portuguese) refers to the use of elements used in the development of video games, such as aesthetics, mechanics, and dynamics, within a new, different scenario from the game. In the sphere of education, it is currently perceived the constant presence of technological interaction and its role of influencing the behavior and relationships in the lives of students, however this does not translate into the way the school teaches, where there is a distance between these two scenarios, and in this aspect, strategies are needed that contributed to the improvement of current teaching (MICHELS; FERREIRAA; PEACE, 2019). The use of games has been motivated by the increase in research on gamification in other areas such as education. Games are powerful tools capable of enhancing learning in numerous areas of knowledge, which has in the game the power to influence, engage and motivate people (BORGES et al., 2013).

When we observe the educational context, we perceive the constant presence of technological interaction and its influence on the behavior and relationships in the lives of students. When we analyze the current structure and form of teaching in schools, we can perceive the distance that exists between these two realities, requiring tools that can contribute to the improvement of current teaching. It is in this scenario that the strategic potential of gamification in the educational area is considered, especially because it is a way to engage students and provoke feelings of pleasure and satisfaction when completing the activities, especially for its possibility of sharing knowledge involving them in an environment that involves fun with learning.

Digital games are popular entertainment features for audiences of all ages, primarily tweens and teens, but it also covers users in the adult phase of life. Approximately 23% of Brazilians are regular or casual players, corresponding to about 45 million players, a different reality to the USA, where about 50% of households have at least one device capable of running commercial games such as computer, console, 'smartphone' (MARTIN, 2018).

The use of the game for educational purposes reflects on two main functions, the playful, where it is related to fun, pleasure and the educational function, where the pedagogical and the educational is involved (KISHIMOTO, 1996), being necessary a balance between the two functions to obtain a pleasurable teaching and a meaningful learning (Soares and Cavalheiro, 2006; Kishimoto, 1996). It is an available resource that can be used to experience an 'online' learning environment, using playful resources through educational games that allows the development of important cognitive skills, with resources that enable the process of building knowledge efficiently in the different areas of knowledge in the educational scenario, the Liveworksheets.com platform is a platform that deserves attention from educators and in the gamification context is a tool that motivates action by promoting learning (PIRES et al., 2019).

Liveworksheets.com is a web-based platform and the advantages for students and teachers are related to interactivity, saving time and paper. Students can work the worksheets using resources such as 'smartphone', 'notebook', 'tablet' and send their answers to the teacher by simply having access to the 'internet'. This interactive platform has many variations and possibilities, and can be used by any discipline and its proposal is based on the layout of interactive digital files with which learning is consolidated, managing to arouse the interest of the student through playful activities, experiencing a teaching-learning space, where he learns by playing and plays to learn, while the teacher has the possibility to give 'feedback' on their knowledge through videos, colors, drawings, diagrams and virtual tasks, a tool where students reason and build new knowledge (PATIÑO-QUIZHPI et al., 2020).

The games when destined to education fulfill their pedagogical role revealing their importance, because through the game they promote teaching-learning situations, increasing the construction of knowledge, developing the capacity for initiation, active and motivating action (FIALHO, 2008).

Its use has been considered positive in pedagogical practices since, the playful, arouses the interest of students and can help to develop skills in addition to contributing to autonomy through various activities. The essential elements of the games such as rewards, scores and challenges have gained space and possibilities in the educational process, proving to be effective to bring students closer and expand their school performance (MICHELS; FERREIRAA; PAZ, 2019). In the context of gamification, despite being a relatively new concept, and of reduced applicability in school spaces, it is a positive strategy, as it awakens beyond interest, the attention of students, providing engagement in teaching, bringing motivational elements borrowed from games that are reflected in behavior and learning (VIEIRA et al., 2018; MICHELS, FERREIRA, PEACE, 2019).

3 METHODOLOGIES

It is exploratory research of bibliographic character, seeking to analyze the interactive spreadsheets existing in the environment of the platform with the purpose of stimulating the

understanding of its functionality, according to Gil (2022) is a study that provides greater familiarity with the problem, facilitating the understanding of the phenomena.

The article addresses the versatility of the Liveworksheets.com platform and the aspects related to the creation of games aimed at learning, the care of the use and the advantages of this resource in the teaching-learning process. In this article, two types of questions will be addressed: (1) "word search" and (2) "crossword". In Figs. 1 and 2 we see the home page of the Platform Liveworkshees.com where you can see in Fig. 1 four worksheets after the search for "Word search" and in Fig. 2 four spreadsheets, after a search for "crosswords".

Figure 1. Platform Liveworksheets.com. a) home page featuring four worksheets kind of a word search. b) home page featuring four worksheets
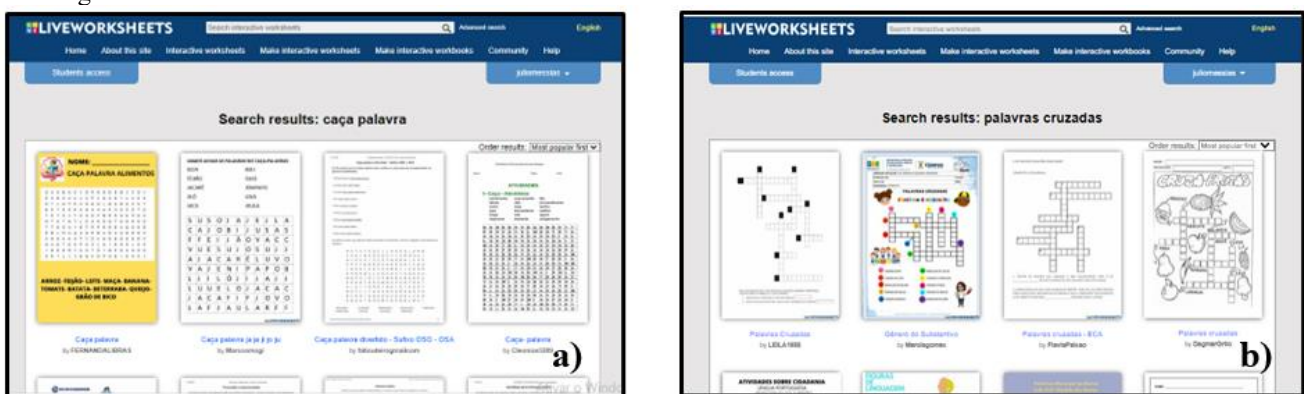


4 RESULTS AND DISCUSSION

The platform Liveworksheets.com allows you to develop two gaming activities, crossword puzzles and word searches, 'game' modalities that are easy to execute.

Santos (2014) explains that games such as word search are instruments that can help learning, since it stimulates mental development, becoming a great ally for practice, reasoning, memorization and stimulation of reading (COELHO, 2020). Fig. 3 shows an activity aimed at elementary school in the discipline Portuguese on gender available on the platform.

4.1 WORD SEARCH

Figure 3. Platform Liveworksheets.com. a) Spreadsheet ID: 1378842 (https://www.liveworksheets.com/me1378842mc). b) Enlarged area of the spreadsheet.
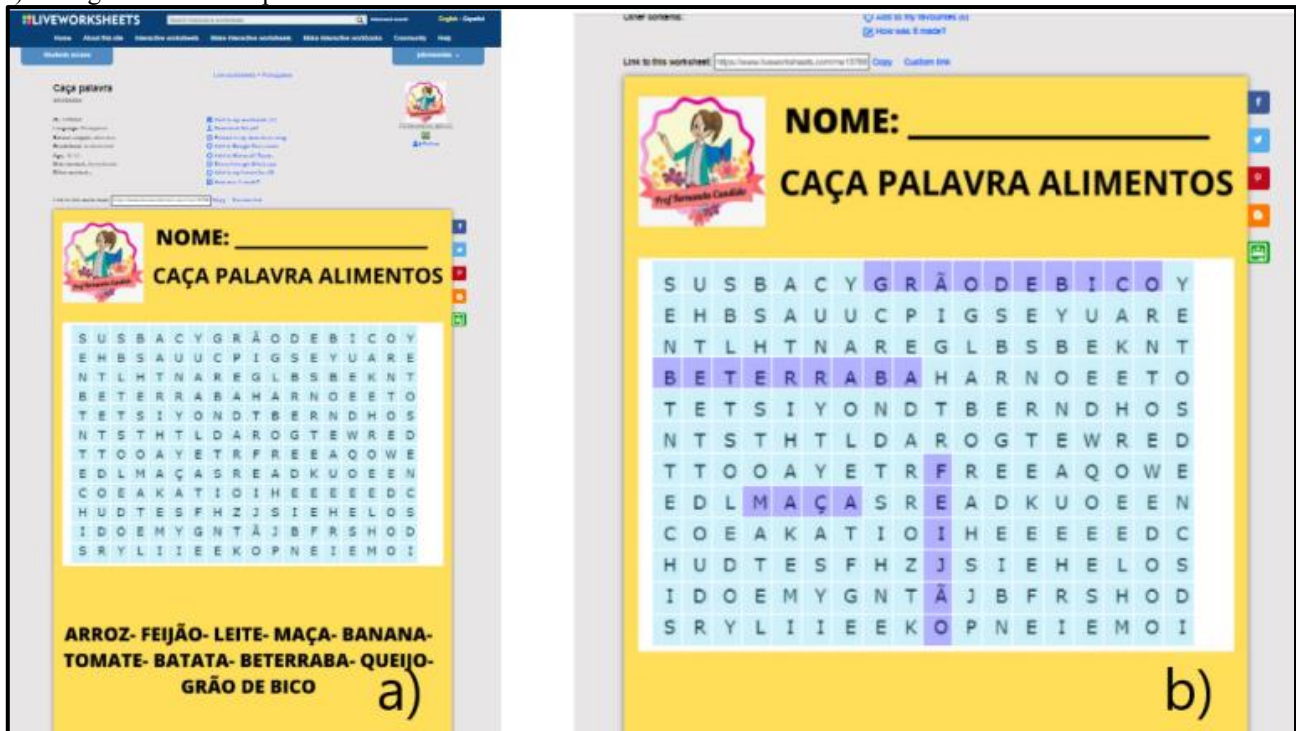
To elaborate a word search on the platform Liveworksheets.com we suggest creating the fic on a game creator site like Geniol (https://www.geniol.com.br/palavras/caca-palavras/criador/), there are several sites that can be used to elaborate crosswords such as Smartkids (https://bncc.smartkids.com.br/gerador-de-caca-palavras/), Racha cuca (https://rachacuca.com.br/palavras/caca-palavras/criar/), among others. In the example presented in Fig. 4 there is a geography activity whose objective is to find the capitals of the Northeast region.

Figure 4. Site www.geniol.com.br/. Activity created on the capitals of the Northeast.

Capitais do nordeste

As palavras deste caça palavras estão escondidas na horizontal, vertical e diagonal, sem palavras ao contrário.

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E  F  I  R  I  U  I  R  D  A  S  T
H  J  O  Ã  O  P  E  S  S  O  A  S
E  H  S  R  N  A  T  A  L  E  V  R
A  N  I  Ã  T  S  R  E  C  I  F  E
W  M  E  I  O  A  T  S  E  R  E  T
M  T  R  O  C  L  L  R  S  S  T  H
A  Y  A  A  S  V  U  E  C  A  I  S
C  O  J  T  E  A  H  Í  Z  L  A  H
E  U  R  I  M  D  T  E  S  A  E  P
I  T  N  O  I  O  I  I  E  D  V  D
Ó  D  E  T  E  R  E  S  I  N  A  I
R  E  H  W  M  M  I  U  N  E  F  S
```

| ARACAJU | JOÃOPESSOA | NATAL | SALVADOR | TERESINA |
| FORTALEZA | MACEIÓ | RECIFE | SÃOLUÍS | |

Once the word search is prepared, it is transferred to the activity sheet (sheet) that will be converted into pdf, jpg or png and then attached to the Liveworksheets.com platform. Fig. 5 and Chart 1 present the steps required to create the game on the platform.

Figure 5. Platform Liveworksheets.com. Worksheet creation steps ID: 3094808 (https://www.liveworksheets.com/al3094808gq). a) The created form is saved in pdf; b) Place of creation of the interactive spreadsheets; (c) the initial stage for attaching the fiche to the platform; d) Sheet on the platform ready to be transformed into an interactive spreadsheet; e) Construction of the rectangle-sized box; f) Write the word *"wordsearch"*; g) Enter in the box the number of rows and columns, in the example are *"12 x 12"*; h) The area of the word search demarcating all the letters; i) Word search ready for use.
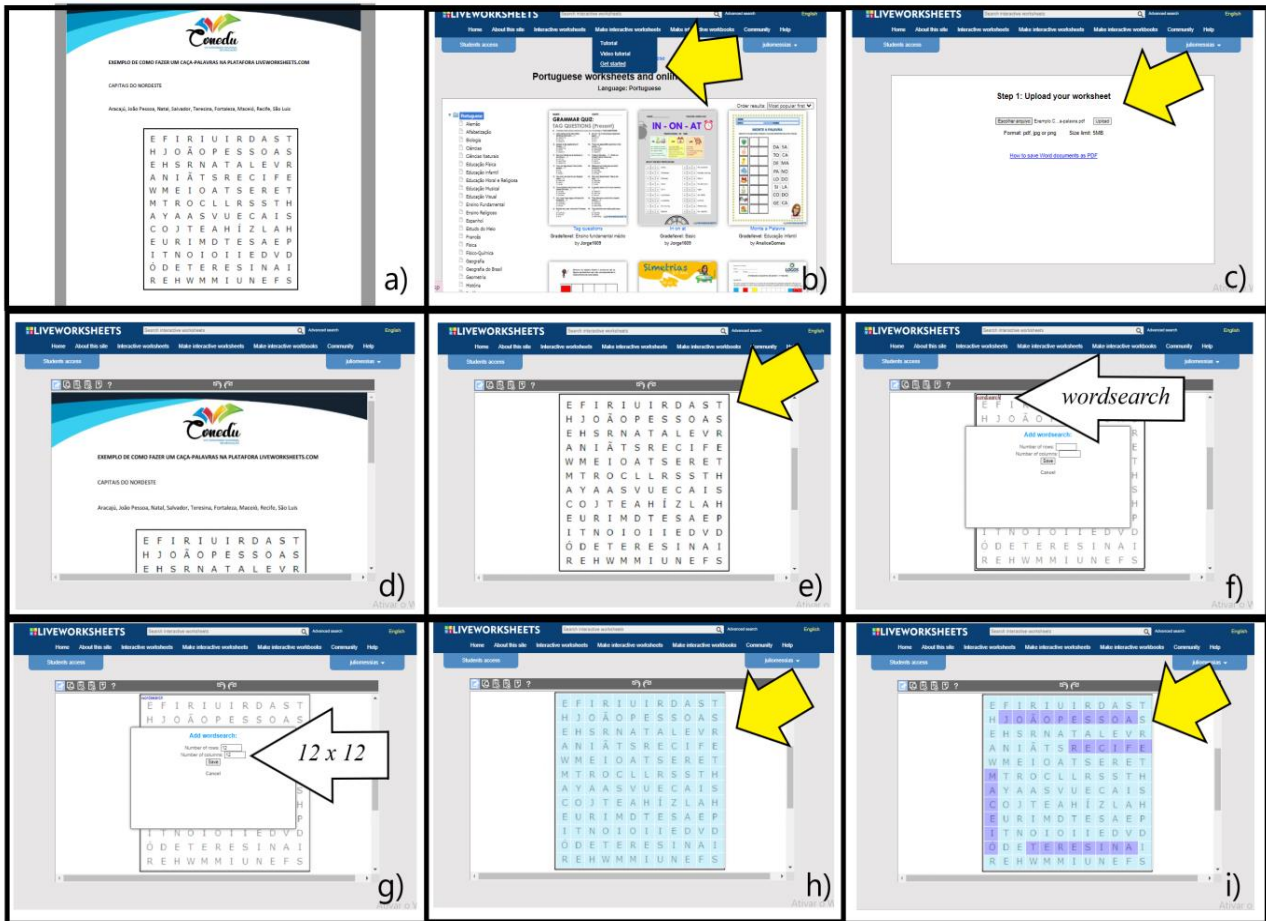

Table 1. Steps required to create a word search game on the liveworksheets.com platform

Order	Steps
1st	Convert the activity to pdf, jpg, or png format (file)
2nd	Access the platform to create the spreadsheet
3rd	Attach the file
4th	Open a word search-sized text box
5th	Type in the *"wordsearch" box*
6th	Enter the number of rows and columns in the opened box (in the example= 12 x 12)
7th	The word search will appear with the letters separated by squares
8th	Ready-to-use activity

4.2 CROSSWORD PUZZLES

Crosswords are games that associate knowledge with play, making learning more pleasurable (ARAUJO et. al., 2012; ANTUNES et al., 2010), being a popular game for all age groups (SANTOS, 2014). Fig. 6 is an example of an exercise, crossword puzzles available on the platform, developed for students of early childhood education (Portuguese), in this activity the teacher asks the students to write in the corresponding spaces the name of the indicated figure.

Figure 6. Platform Liveworksheets.com. a) Spreadsheet ID: 1317983 (https://www.liveworksheets.com/np1317983is). b) Enlarged area of the spreadsheet showing a few words filling in the blank boxes.
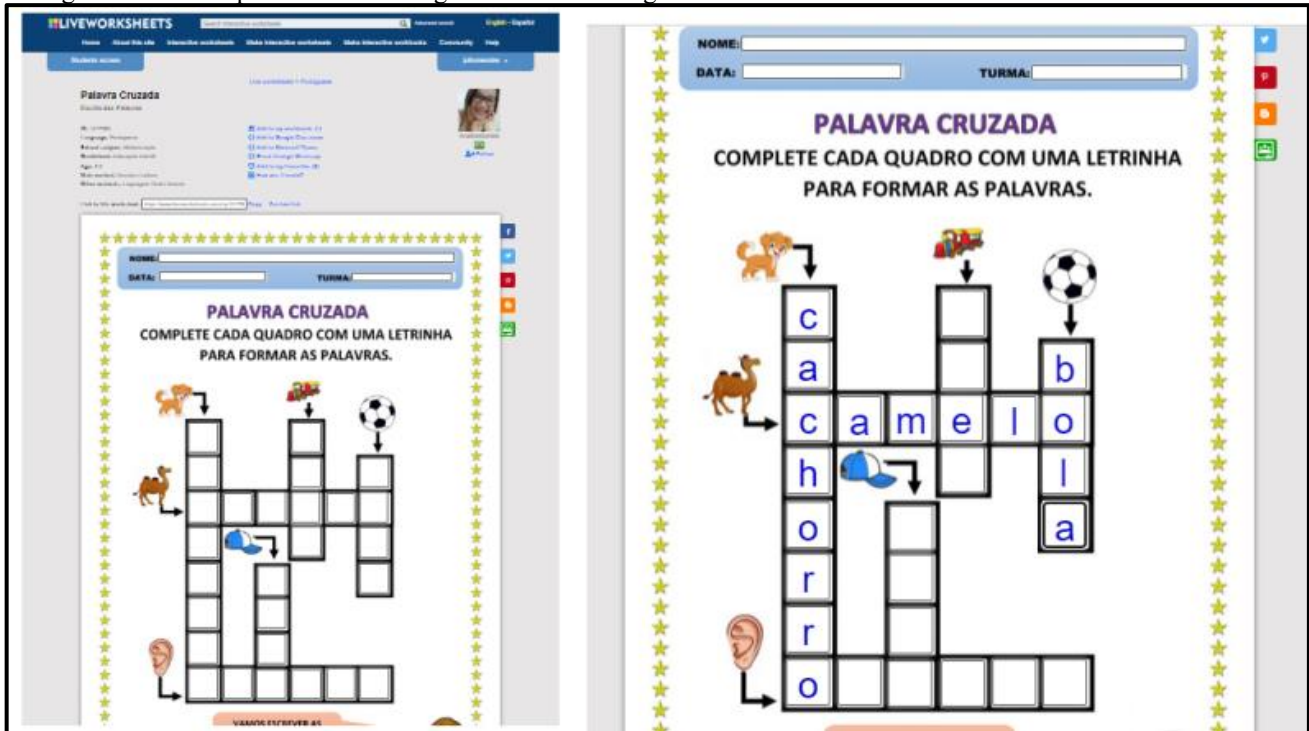
Although there is no tutorial exemplifying how to create this game mode, on the platform Liveworksheets.com it is possible to create a crossword puzzle in a simple way. Lima et al. (2021) explain that crosswords are games that consist of associating words in vertical and horizontal lines, and may or may not contain spaces between constructions. The use of crosswords as a didactic resource allows the interaction of the student with the game and with the theme worked in the classroom, allowing to develop in the student memory and reasoning skills.

To elaborate a crossword on the platform Liveworksheets.com it is advisable to create the activity (token) on a gaming site. Fig. 7 presents an example of a crossword puzzle game created on the Puzzel website (https://puzzel.org/pt/crossword/create), on the web there are several sites that can be used for the same purpose such as Soportugues (https://www.soportugues.com.br/secoes/jogos/palavrasCruzadas/) and Smartkids (https://bncc.smartkids.com.br/gerador-de-cruzadinha/). In the example presented in Fig. 7 we have

the same activity exemplified in Fig. 4, now in the format of a crossword, with the same objectives, that is, to identify the capitals of the Northeast region.

Figure 7. Puzzel site (https://puzzel.org/pt/crossword/create). Activity created on the capitals of the Northeast.

HORIZONTAL

1   Capital do Estado da Bahia

4   Capital do Estado de Pernambuco

6   Capital do Estado da Paraíba

8   Capital do Estado do Piauí

VERTICAL

2   Capital do Estado de Sergipe

3   Capital do Estado do Ceará

5   Capital do Estado de Alagoas

7   Capital do Estado do Maranhão

When reading the tips, in the form of questions or images the student makes the association complementing the gaps to fill in all the words. For Silva (2018) crosswords are traditional games, common and well accepted by the population. It is an exercise of reasoning and knowledge that can be used for the most varied educational topics, and according to Costa et al. (2019) it is an activity that stimulates reasoning.

Once the crossword puzzle is elaborated, it is transferred to the activity sheet (sheet) which will be converted into pdf, jpg or png and then attached to the Liveworksheets.com platform. Fig. 8 and Table 2 present the steps required to create the game on the platform.

Figure 8. Platform Liveworksheets.com. Worksheet creation steps ID: 3095257 (https://www.liveworksheets.com/xo3095257oy). a) Created form saved in pdf; b) Place of creation of the interactive spreadsheets; (c) the initial stage for attaching the fiche to the platform; d) Sheet on the platform ready to be transformed into an interactive spreadsheet; e) Construction of the box for each square and write the letters of the corresponding words.
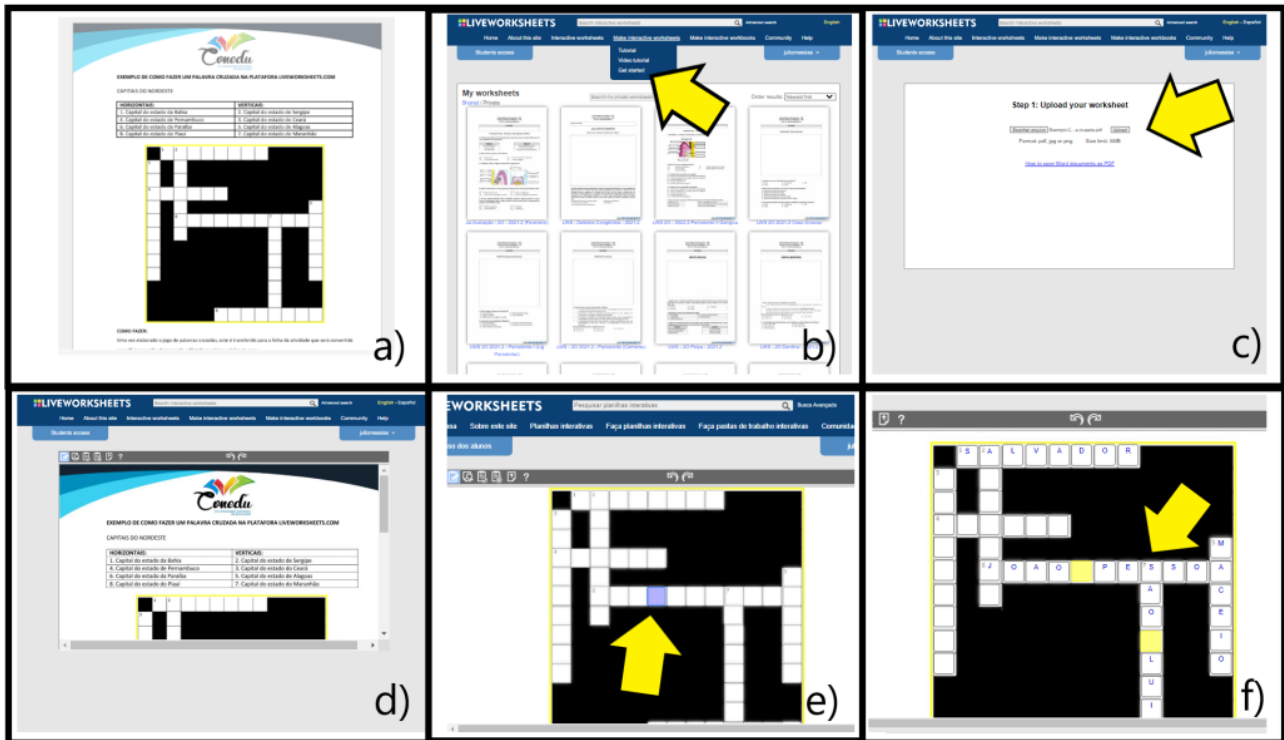

Table 2. Steps required to create a crossword puzzle game on the liveworksheets.com platform

Order	Steps
1st	Convert the activity to pdf, jpg, or png format (file)
2nd	Access the platform to create the spreadsheet
3rd	Attach the file
4th	Open a text box the size of each square
5th	Write in the boxes the letters of all the words

5 FINAL CONSIDERATIONS

The Liveworksheets.com platform is an interactive tool that allows teachers to share their worksheets in a variety of ways. The activities can be shared through Classroom – Google, Teams – Microsoft, WhatsApp and by Link which makes it a pedagogical tool of great relevance and multiple possibilities, since remote activities will increasingly become a reality in schools.

The game is an instrument with a playful and challenging character and can be used by teachers as an aid in the teaching-learning process being another way to motivate and instigate the student before this new scenario that we live. The application of games such as word search and crossword puzzles using the Liveworksheets.com platform is another possibility to use this educational technology with interactivity, providing an opportunity to change the way of teaching and learning, transforming fun into learning.

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