FAZGAME GUIDE - PEDAGOGICAL PRACTICES

This guide will help you to understand how to develop projects of educational games design with your students. Where they will learn new contents in a playful and proactive way, while developing the 21th Century skills.

FAZGAME GUIDE – PEDAGOGICAL PRACTICES
THANK YOU FOR USING FAZGAME GUIDE!

From now on, inserting the process of game design in your teaching practice will be simple and fun. And enrich your students learning process.

But how is this possible?

Well, when applying the first game we developed, Jessica, an eight years old girl, asked, with her bright eyes: "**Who have designed the game?**".

Listening to this question, we understood that students want to be authors of the educational process. She was one of the persons who inspired FazGame development.

We create FazGame for students to learn with **sparkles in their eyes**. And you, as a teacher, can be satisfied with the results achieved, and support your students to develop essential skills during game design process.

BUT HOW DOES IT HAPPEN?
READ TEACHERS REPORTS OF FAZGAME EXPERIENCE WITH THEIR STUDENTS

"While making the history of the games, I could see Portuguese and Text Production improvement; geographical thought was present while students worked on objects positioning and scenario elements; while defining score and bonus phases they worked on mathematical concepts. Throughout the process, students also worked on a notion of strategic planning objectives and Life Project course contents. With site availability and the ability of the student develop game creation by their own, the new pedagogical gain is learner autonomy"

Professor Daniel Ramos
E.M. Visconde do Rio Branco – Rio de Janeiro

"The use of FazGame tool proved to be a constructive teaching resource to mobilize and strengthen the knowledge promoted and practiced in Physical Education. The tool demonstrated efficiency to attract the attention and motivation of students to develop games with handball knowledge and the Olympic values in a reflexive and contextualized way."

Professor Marcio Turini
Escola Estadual de Ensino Fundamental República FAETEC – Rio de Janeiro

UNDERSTANDING GAMES RELATIONSHIP WITH THE LEARNING PROCESS

In order to understand what students learn to design a game, you need to understand what aspects differentiate a game of other narratives.

Why a game holds so much our attention?

While a game has defined rules, it has components of surprise, because the pathway to win is not fully known by the player.

And so, a game challenges us to improve in some competencies, search for some information or find something new to overcome each step.

Another important aspect: the game is a "non linear" narrative. But what is this?

In a game, several actions can happen at once, and do not necessarily depend on each other. For example, to explore an environment, you can click on a door that leads to another room, open a book and find information or speak to a person who "delays" your route. This feature is called parallelism.

These different choices allow a game to have alternative paths. As in life, while playing a game you can have multiple ways to achieve a goal.

But what is a game?

A game is a challenge to be overcome;

You have to understand the rules and game logic to solve it;

Progressing in game challenges involves making mistakes, analyzing errors and seeking a new way, by testing hypotheses to win. If you give up in the first errors, you´ll probably not win a game.

What can we learn while playing a game?

A game is a protected environment that simulates some situations. When playing, we make decisions, evaluate the consequences of our decisions and learn through this process.
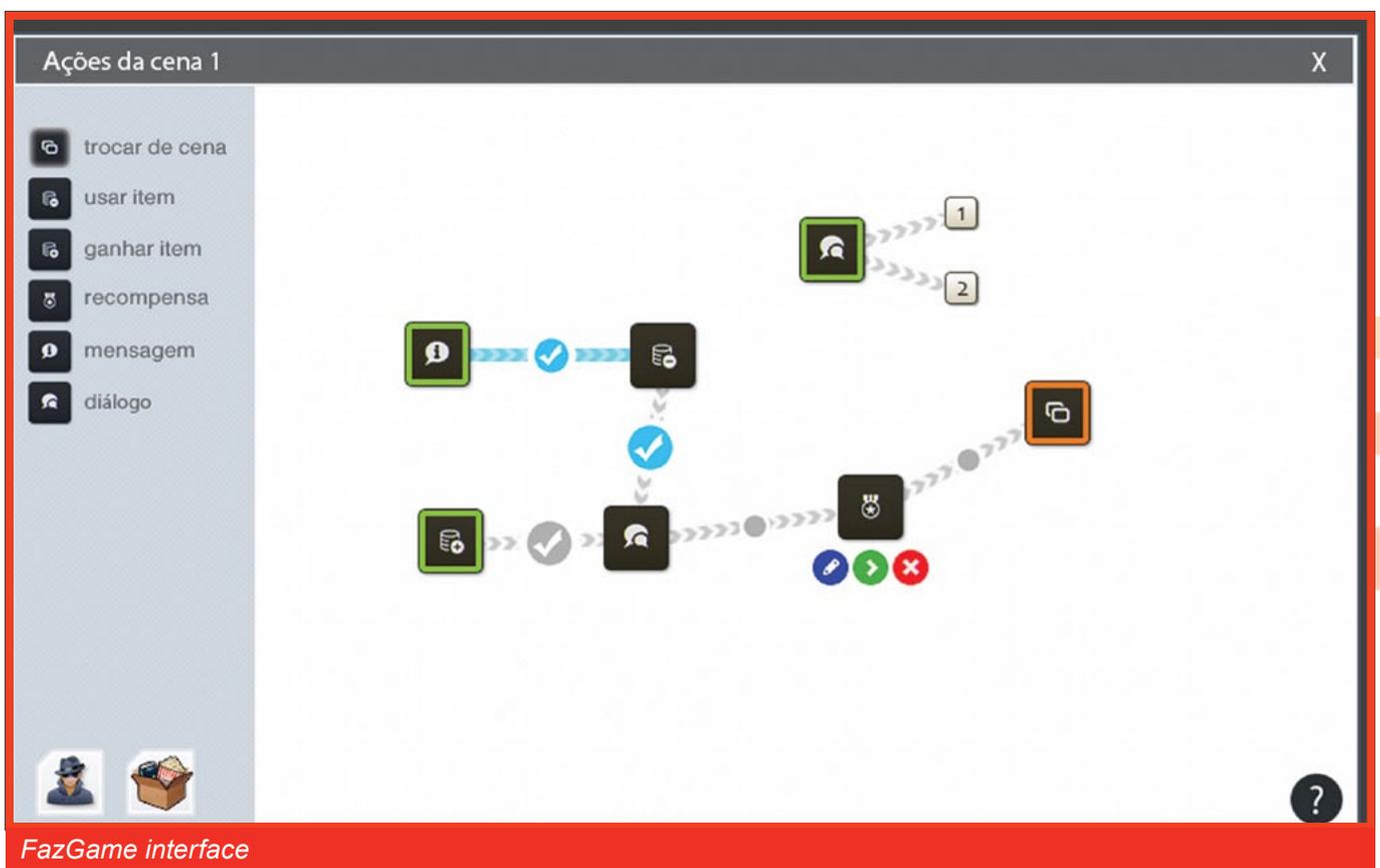
What more we learn when designing a game?

Creative writing involves to imagine and develop a narrative, connected and with unusual situations.

A game project requires planning to define the theme, characters, settings and story. In designing a game, nothing can be more productive than working as a team integrating skills.

As students design a game that presents educational content in an interesting way, they learn about this educational content proactively.

Using **FazGame**, you can fulfill a project where your students **learn specific educational content** and simultaneously develop core competencies to our times – **21th Century Skills**.

FazGame interface

Competencies Development

Competencies	Definition
Planning	Preparation for any activity, which establishes the goals, milestones, deadlines and means to achieve them.
Creativity	Ability to let different ideas patterns flow – ideas which are elaborate, complex and original.
Collaboration	Ability to carry out activities with groups of people who own different characteristics, opinions and interests, using their complementary skills synergistically to achieve a goal.
Logical Reasoning	• Build a strategy to solve a problem • Is able to plan or describe steps or events in order • Use logical reasoning in verbal sphere: assumptions, causality, questions such as "what if" • Create and identify patterns • Apply abstraction and generalization • Use trial and error approach and learn from it
Problem Solving	• Evaluate the problem • Gather information and identify possible solutions • Choose best solution • Test chosen solution • Evaluate results
Persistence	A higher level than determination, where motivation allows to withstand frustrations and overcome the most difficult obstacles. * **Determination** - inclination for achievement / activities completion and obstacles overcoming

INSERTING GAME DESIGN IN THE LEARNING PROCESS

A game design project must go through the steps below:

Plan
Plan game desing project.

Motivate
Motivate the students: about the theme of the game to be designed, to the use of educational games and to design their own games.

Research
Reseach on the game subject, to have high quality educational content to the game.

Create
Create educational game, exploiting full aspects of game design.

Post, test and evaluate
 Post the educational game, and assess learning performance measures.

Spread
Disseminate educational game on websites and social networks. Plan activities with educational games in the school community, to enhance project scope.

Record
Create records of educational game design and of the use of the game in the learning process. Post achievements in educational sites, blogs and social networks, supporting the enhancement of the use of technologies in education.

PLAN

Plan the game design project. To plan your project, it is interesting to think about the following aspects (Planning Roadmap):

● For which class / age group the project will be applied? How will be the organization of the groups?

● Does the school have adequate infrastructure (equipment and internet access) to carry out the project during school hours?

● The project will be implemented within school hours, after school hours (as students homework) or mixed form (with activities in school and out of school)?

● What theme / educational content will be learning objective of the game design process?

● What 21th Centuty Skills will be assessed during the game design process?

> In order to measure the results of the project you will create with your students, it is very important to define the objectives and learning goals - that should be shared with the students!

The project described below, used in FazGame Pedagogical Guide, should be used as an example to support the planning of your game project.

Example:
Project "Environment Games"

Class:
8th grade. 35 students divided into 7 groups of 5 student each.

Infrastructure:
The school has a shared computer lab, and the internet speed is regular.

Project Application Form:
The project will be conducted partly in school and partly at home by students.

Theme:
Environment / Waste and chemical waste.

21th Century Skills assessed:
Logical reasoning, problem solving, persistence, creativity, planning, collaboration.

Learning objectives Content	Learning goals
Waste and chemical Waste	● Enumerate common situations where waste disposal and chemical waste impact the environment. ● Demonstrate in the game at least two positive and two negative forms forms of disposal.
Learning objectives – 21th Century Skills	**Learning goals**
Planning	● The group fulfilled the steps of game design proposed by the teacher. *How to Measure:* assess each group´s partial deliveries.
Creativity	● The group had at least two creative ideas used in the game design. *How to measure:* qualitative assessment of the teacher, the group and the class.
Collaboration	● The group joined and participated in a balanced manner in the various activities of game desgin. ● The group collaborated in the game design process with at least one group different from theirs. *How to Measure:* produce a making-off of the project or ask the group to describe the game design process.
Logical Reasoning	● The group has created at least one alternative path in the game. ● The group used the logic "OR" in the game design. ● The group used parallelism in the game design. *How to Measure*: analyzing the game flow in FazGame.
Problem Solving	● The group was effective in treating the waste issue and chemical waste as a problem and presented solutions in the game narrative. *How to measure:* qualitative assessment of the teacher, the group and the class.
Persistence	● The group remained integrated and completed the game desgin, overcoming the difficulties. *How to measure:* qualitative assessment of the teacher, the group and the class.

Planning example:

Step	Person in charge	When?	How?
Planning	Teacher		● Answer planning roadmap. ● Search research sources on the selected theme for students' motivation.
Motivate	Teacher and Students	Week 1: 2 classes	● Introduce the theme. ● Present the project (steps and learning objectives). ● Present FazGame (students will try FazGame)
Research	Teacher and Students	Week 2: 1 class	● Students will do research on the theme at home. ● There will be a classroom debate to produce a framework on the problems related to the theme and the alternative solutions (introduction to the systemic view / problem solving).
Create	Teacher and Students	Week 3 and Week 4: 2 classes	● Students will work at home, and have partial presentations of their progress at school. ● 1st presentation: context and game theme, score, scenarios, characters, scenes briefing. ● 2nd presentation: part of the game created in FazGame.
Post, test and evaluate	Teacher and Students	Week 5: 2 classes	● Each group will play other groups games. ● Discussion with students about the project and the learning process. ● Assessment of projects, groups and process.
Spread	Teacher and Students	Week 6, weeek 7: 2 classes	● Coordinate with students the propagation of games created on the school website and on social networks. ● Coordinate activities with the games to be held by students in the school community ● Evaluate the results of its activity.
Register	Teacher		● Write a report of the project and publish on the school website and social networks, with links to games created.

MOTIVATE

Motivate students to the theme of the game to be designed, for the use of educational games and to create their own game.

Some suggested activities for students' motivation for the project are:

● Discuss the "problem-issue" of the game with students..

> **Tip:** The game theme can also be defined together with the students.

● Present educational games related to the theme (students can play these games).

● Practical experimentation with FazGame.

> **Tip:** Students can be encouraged to watch tutorial videos with examples of creativity and logic applied when creating a game.

● Present and discuss with students the project schedule and learning goals.

> **Tip:** Discuss the importance of developing 21th Century Skills (indicated for students from 13 years).

RESEARCH

Research on the subject, to bring high quality educational content to the game.

Suggested tips for students research:

● Inform sites and referral links.

● Inform research focuses: news on the topic, problems arising, places where the subject is more commom (when applicable), examples of events on the subject in the past, subject impact in the future.

EXAMPLE GUIDE FOR RESEARCH ON WASTE AND WASTE CHEMICÁLS

● What amazing news about waste you have found (recently, 5 years ago, 10 years ago, 30 years ago).

● Do you know the amount of waste dumped in your city?

● What percentage of waste is treated?

● What kind of chemical waste are dumped more in our city, state, country, in the world?

● How is the treatment of different types of chemical waste?

● What is the impact of waste and chemical waste in nature?

● What is the impact of waste and chemical waste in health?

● What preventive actions can be done to reduce waste and chemical waste?

● What research and innovations are emerging in this area?

> For students 10-12 years old, make a guided research.

> Make a debate and produce a framework together with a vision of the past, current and future problems related to the subject, and also the possible solutions (introduction to the systemic view / problem solving).

CREATE

Create educational game, exploiting to the full aspects of game design.

To plan your game, it's interesting to answer the following points:

● Within the selected theme, which problem(s) will you approach in your game?

● What do you want people to learn while playing the game?

● Every game has a starting point or briefing: an initial story from which it unfolds. What will be the briefing of your game?

● What are the characters of your game, their characteristics and roles?

● What challenges people will overcome to win the phases of your game? How they are related to the learning content and the game score?

Check out in the next page, an example of game planning.

Polui S.A.

Problem:
The impact of soy beverage production on the environment.

What we can learn from the game:

- Many plantation-based industries impact the environment because their raw materials use pesticides.
- The type of impact of pesticides in nature.
- For a company to be environmentally responsible, it must supervise the companies that are its suppliers.

Game Polui S.A. briefing:

Who doesn´t like birds? And the color blue? Well, several species of blue macaw were extinct in nature. There is an endangered species: the large blue macaw. A major international organization will reward those who bring information that can help save this species.

The player must find that there is a soy-based beverage company that buys soybeans planted by a cooperative that uses pesticides that pollute the environment. And with that, the large macaws are dying.

Characters:

- Player: in search of information.
- Player Friend: helps the player in the search.
- Employee of NGO: explains the challenge, receives information and awards the winners.
- Head of production of the beverage factory: tries to outwit the player.
- Cooperative Employee 1: shows the correct job.
- Cooperative Employee 2: tries to outwit the player.
- Field Neighbor: shows the impact of pesticides in nature to the player. Not only in the extinction of large blue macaw, but also the mortality of fishes, which changes the whole way of life of the surrounding communities who worked with fishing.

Score:

- Overall score, rewarding the search for information.
- Environmental Responsibility.

Challenges:

- Discover where the large blue macaw lives.
- Discover the beverage plant.
- Getting information from the production chief.
- Find cooperatives and get information.
- Search in the field: finding information with the field resident.
- Deliver information to NGOs. You win the game once you have found the cooperative that pollutes the environment and have talked to the field residents.
- Final: The NGO denounces the company, which pays a large fine and will begin to respect the environment.

Now it's time to create your game using the FazGame resources.

Tips to use creativity in the game creation:
- Creativity is the fluency of non-standard ideas.

- When faced with something creative, it gives us a sense of surprise and joy, and expands the mind.

Ways of implementing creativity in a game:
- Use mystery. The game may not be obvious, you must have to search or discover something - can be mysterious places, mysterious characters, mysterious objects, a mysterious discovery.

- Use scenarios, characters and objects in unusual ways.

- Making references to movies and best-selling books.

- Use riddles and analogies.

The main attributes to implemente logic in a game are:
- **Non-linearity / parallelism** - the main feature of a game. It means that several actions can occur independently.

- **Alternative Paths** - an important feature of a game, as the narrative is not a single path, but has several options. The path is guided by the choice of the player throughout the game.

- **Causality** - an action happens after one or more actions are completed.

- **AND / OR** - are logical resources to implement the causality and the alternative paths. "AND" indicates that an action will happen if all the above actions related to it are true. "OR" indicates that an action will happen if one of the actions attached to is true.

Tips to insert contextualized and challenging educational content in the game:

● The game's theme does not have to be directly connected to the educational content you want to teach. A more contextualized game will be more interesting for the player. You can can use FazGame narrative features and graphical library (scenarios, characters and objects) to create an instigating game.

● It´s an interesting feature to include search links within the game, making the player investigate educational contents to advance in the game.

> **Tip:** Play the game Polui S.A.,
> created with examples of tutorial videos!

POST, TEST AND EVALUATE

Post and test the educational game, and assess learning performance measures. Now that the games are created, it is time to approve them and post them.

> **Tip:** *Watch tutorial video:*
> *"Approval and posting games processes".*

Some suggested activities to do with the class:

● **Presentation of games and the creation process** - each group can present their game and describe the process of creation they has gone through (can be a making off of the project or a report);

● **Games exchange** - each group can play the games created by other groups.

The evaluation of games design and learning process is a very important step. This is how teachers and students will realize ways to improve the interaction and results in future projects.

The teacher can present learning goals – specific contents and 21th Century Skills - opening to a discussion of the process with the whole class. It is interesting to designate a person who will be responsible for note of all the comments.

Another important point is groups evaluatiiong, done together by the teacher and students group. Regarding the importance of 21th Century Slills, the teacher can take advantage of this more individualized activity to show students the prominent points (best group performance) and the improvement points, which can be worked in the next projects.

Here's an example of the skills assessment form:
Click to access the evaluation form

SPREAD

Disseminating educational games created on websites and social networks. Plan activities with the educational games in the school community, to enhance its scope.

Some tips for this activity:

● Post the links of the games on the school website.

● Include a link on the school website to schools page on Portal FazGame.

● Post the links to the games in social networks.

● Present project results to the coordination and school teachers, and plan activities with the games with other classes / school series. It is very interesting to encourage the participation of games authors (students) in these activities, as this will make tangible their proactive participation in the school educational process.

● Search NGOs and other institutions that are interested in the games themes, and can carry out activities with the participation of the students.

RECORD

Create records of educational game design and of the use of the game into the learning process. Post achievements in educational sites, blogs and social networks, supporting the enhancement of the use of technologies in education.

When writing a record or article about the project undertaken, the teacher can submit it to scientific journals and conferences of educational technology or games (eg: SBGames Brazil - http://www.sbgames.org.br/).

These materials can also be posted on the school website and on social networks.

The teacher can also encourage students to write articles about the learning process, subjecting them to scientific journals and conferences of educational technology or games.

Thus, teachers and students will be proactively contributing to research and innovation in the implementation of new educational technologies in schools.

YOU CAME TO THE END OF FAZGAME PEDAGOGICAL PRACTICES GUIDE! IT'S TIME FOR PRACTICE!

You are now ready to create FazGame projects with your students! Your students will design games that can be used by the whole school community! And during this process, develop 21th Century competencies.

We want to keep up with your experiences with FazGame! Send an email telling about your projects to **contato@fazgame.com.br**.