



Adaptation of learning content for students with SLDs

What are Specific Learning Disorders (SLDs)?

Game mechanics for language learning

Introduction

Making an engaging game means not restricting oneself solely to language learning, but using successful game design concepts from the gaming industry. Key components to player engagement are autonomy, competence and relatedness. This practice sheet will show some game mechanics of a digital game-based learning game called Terra Alia (30 Parallel, 2021).

What you should take into consideration

To create autonomy: give options to the player, and have them feel in control and responsible for their actions.

For competence, the player must feel up to the task. Through practice, a sense of mastery must emerge.

The grail is to have the player reach the state of flow. It's the sweet spot between too much difficulty which creates frustration but not too little to avoid boredom.

For relatedness, the player should have relationships, feel some belonging, feel part of something bigger, responsible for the well-being of others. Ideally, it is real players in a multiplayer game but it works with fictional characters.

Designing a gameplay/puzzle

The point is to formalize the skills and actions (if possible linked to learning objectives) that the player would have to perform to achieve their goal.

Example:

The learning objective is to learn new vocabulary.

The game goal is to acquire new words to fuel spells and gain magic power by finding and clicking new objects (not yet learned) in the environment.

To formalize such a game's loop, the player actions could be:

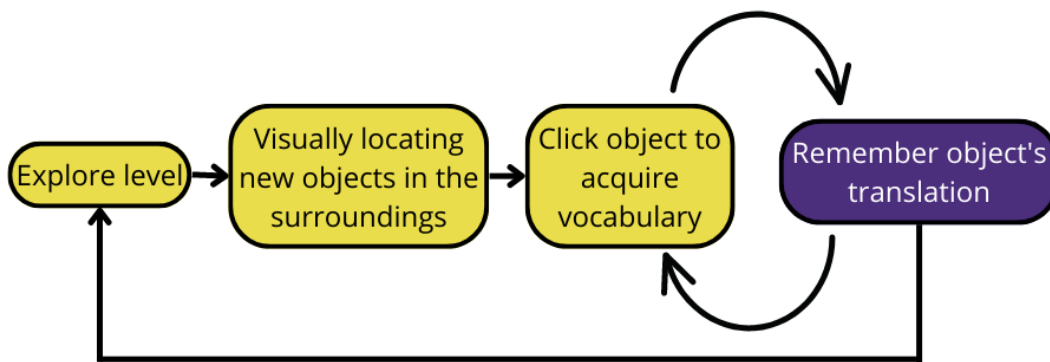


Figure 1. Example gameplay formalization from a Game-based learning design.

Example of mechanics

Here we break down more of the mechanics of Terra Alia (30 Parallel, 2021).

A big mechanic in the game is combat.



Figure 2. Combat in Terra Alia.

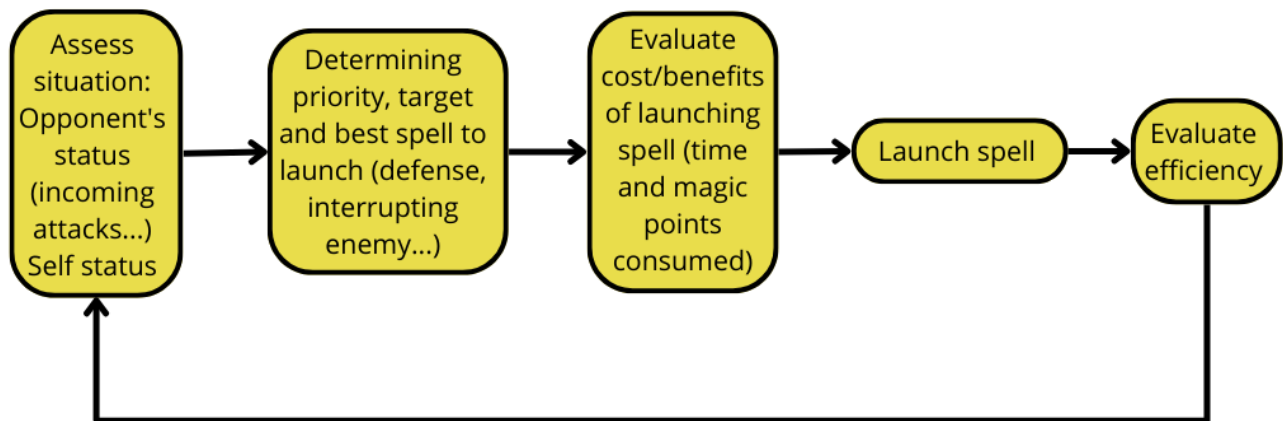


Figure 3. Example formalization of combat in Terra Alia.

We can see that this mechanic requires a lot of problem-solving but doesn't require any language learning skills. It is a purely ludic activity. This one is focused on competence, the player wants to defeat the enemy by mastering their pattern (find the best combination of spells to use). It also fosters autonomy a bit by letting the player choose the spells they want and devise a strategy.

Another game mechanic in the game is the practice of vocabulary.

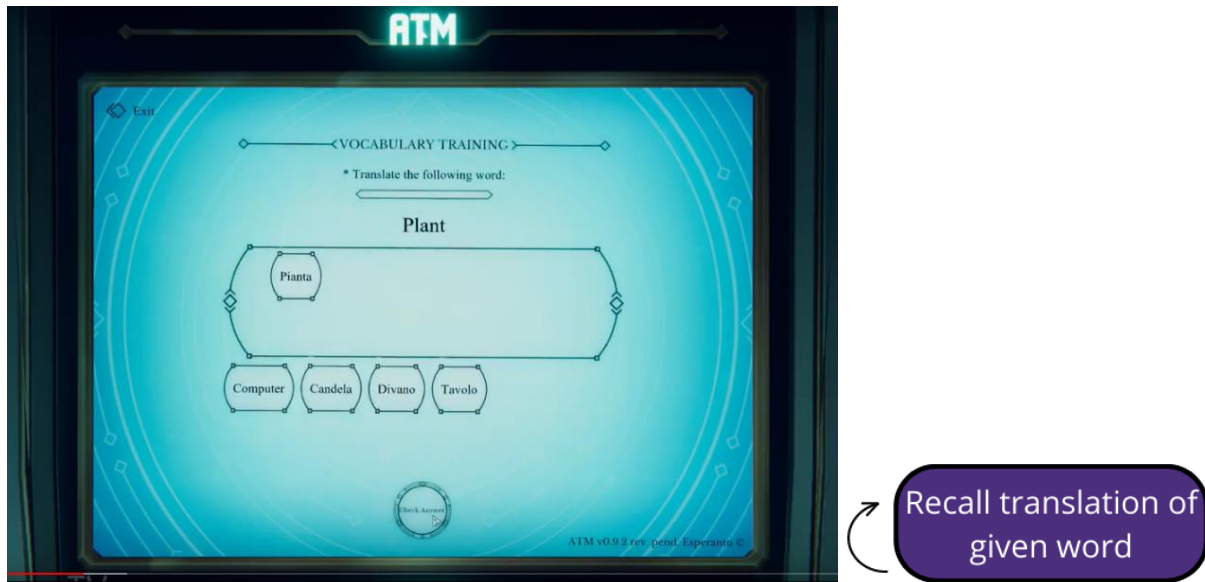


Figure 4. Example formalization of a serious game mechanic focused on mastery.

We can see by the simplicity of this mechanic (the pattern/puzzle is made of only one action that is a pedagogical action) that it cannot really be called a game, it's more a disguised vocabulary exercise.

What makes it interesting is its macro-gameplay context. Solving it generates some magic points for the player that they can use in combat. So this purely serious activity becomes a means to prepare for the ludic one.

Mastery is fostered thanks to a score summary at the end of the exercise.

One last mechanic is the dialogue sequence.

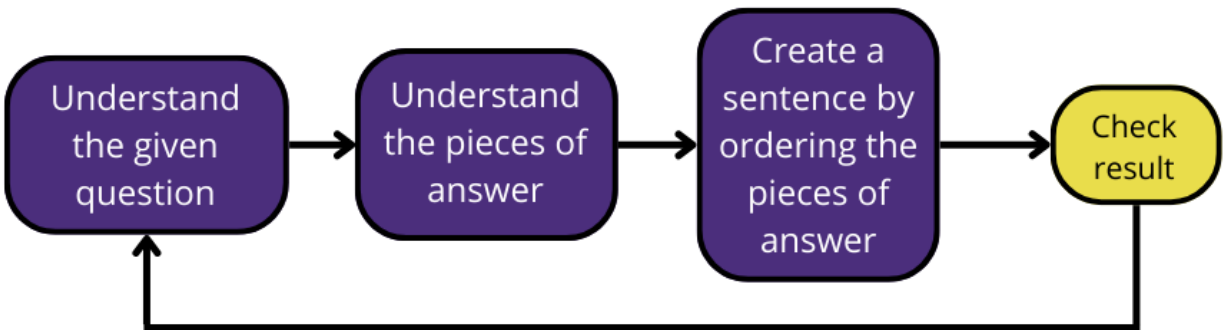
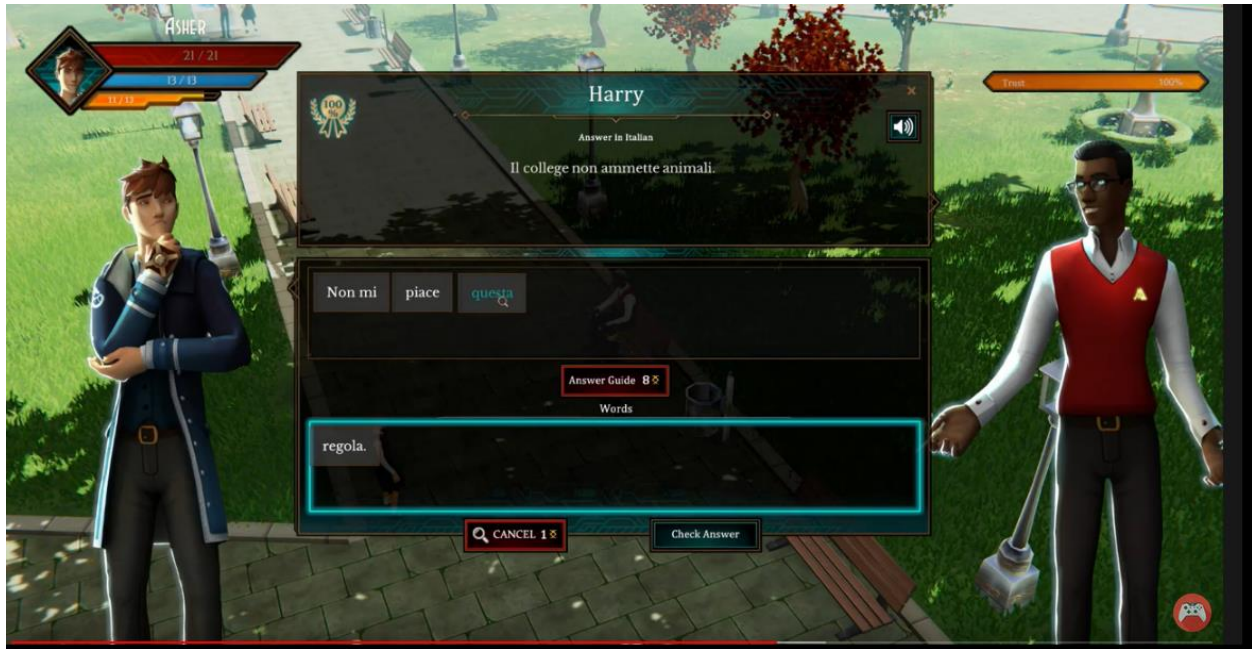


Figure 5. Example formalization of a serious game mechanic focused on mastery.

Again, this mechanic is mostly made of serious activities and is close to exercise. However, the desire to keep the trust of the interlocutor and the promise of reward (moving the story forward, obtaining a quest/item...) is a reward anchored in the game fiction and can be motivating. It uses relatedness as the player doesn't want to lose the other person's trust.

Conclusion

When designing game mechanics for game-based learning one should aim at the 3 pillars of "traditional" games to foster motivation: autonomy, competence and relatedness.

Resources and references:

- Albinet, M. (Ed.). (2008). Concevoir un jeu video (1nd ed.). fyp éditions
- Czauderna, A. (2019). The Gameplay Loop Methodology as a Tool for Educational Game Design. academic-publishing.org, 17(3)
- [VideoGamesTV]. (2021, May 14). 'Terra Alia – Gameplay No Commentary [PC ULTRA 60FPS]' [Video File]. Retrieved from <https://www.youtube.com/watch?v=LUQQn25gQnc>

Images

- Game images were taken from the **Terra Alia gameplay video** from **VideoGamesTV**, 2021



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