



Inclusive video game design ideas for a language course
Design a game for ESL

Finding the balance between fun and learning objectives

Introduction

In game-based learning two major approaches exist:

The "extrinsic" approach, in which the "serious" and "playful" dimensions are separated. We alternate phases of play with phases of learning. The game is then used as a "reward" for understanding the serious content.

The "intrinsic" approach, aims to mix the "serious" and "playful" dimensions so that it is no longer possible to separate them. We seek to integrate serious content within the game mechanics.

Some examples (Prestopik, 2016) show that the extrinsic approach is not efficient if the serious and playful activities are not linked well.

Games are actually learning activities: the player learns the puzzle of the game. Modern games are actually very good at making players learn how to play them.

Aspects to take into consideration

Gagne's nine-step process of learning

In 1965 Robert Gagné theorized a series of steps associated with the mental condition for learning.

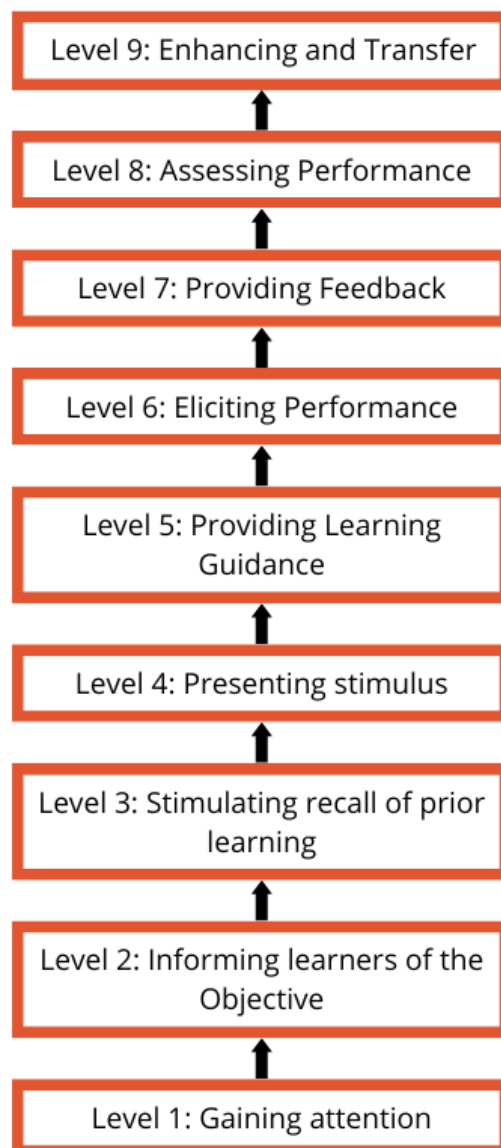


Figure 1. Gagne's Nine Levels of Learning (after: mindtools.com)

Gain the students' attention

Present a stimulus to capture the learner's attention. Stimulate students with novelty, surprise, and uncertainty.



Figure 2. The game presents a spectral form of a known character with an exclamation mark to make players want to interact and continue the story (source: Terra Alia)

Inform learner of the objectives

Help learners understand what they are expected to do by describing or having them set the required performance. Include/present the objectives on the assessment prompt.





Figure 3. The player learns that to recover their magic, they need to learn words (source: VideoGamesTV, 2021)

Stimulate recall of prior learning

Help learners make sense of new information by relating it to previous experiences. Check learners' understanding of previous concepts. Have them incorporate previous concepts in the current activities.



Figure 4. The player needs to reuse skills: walking around and interacting with objects (source: VideoGamesTV, 2021)

Present the content

The actual learning content is provided. An obstacle or challenge is presented that requires learning and mastering a skill/pattern.



Figure 5. The player interacts with objects and is given vocabulary to learn (source: VideoGamesTV, 2021)

Provide learning guidance

Include tips on how to navigate the content. Use clear instructions.



Figure 6. The game provides a tooltip to help the player perform the new skill (source: VideoGamesTV, 2021)

One potential problem with the example image: one could think, that only diagonal dashes are possible, while they can be done in any direction.

Elicit performance

Have the learner apply what they learned by performing exercises, puzzles, problem-solving, and memory recall activities.

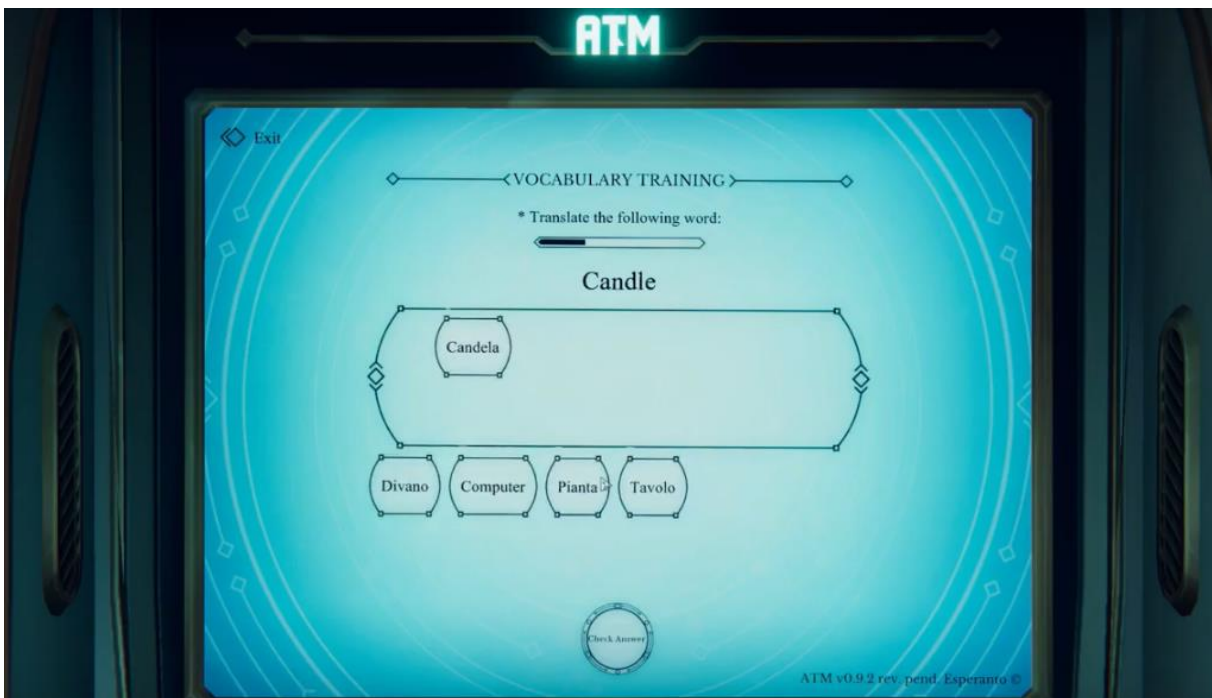


Figure 7. The player is told that to recharge their mana they need to perform vocabulary recall exercises (source: VideoGamesTV, 2021)

Provide feedback

Provide direct feedback to help learners' assess their performance.

Confirmatory feedback: validate a good performance.

Evaluative feedback: inform on accuracy of performance (score)

Descriptive feedback: provide suggestions to help improve

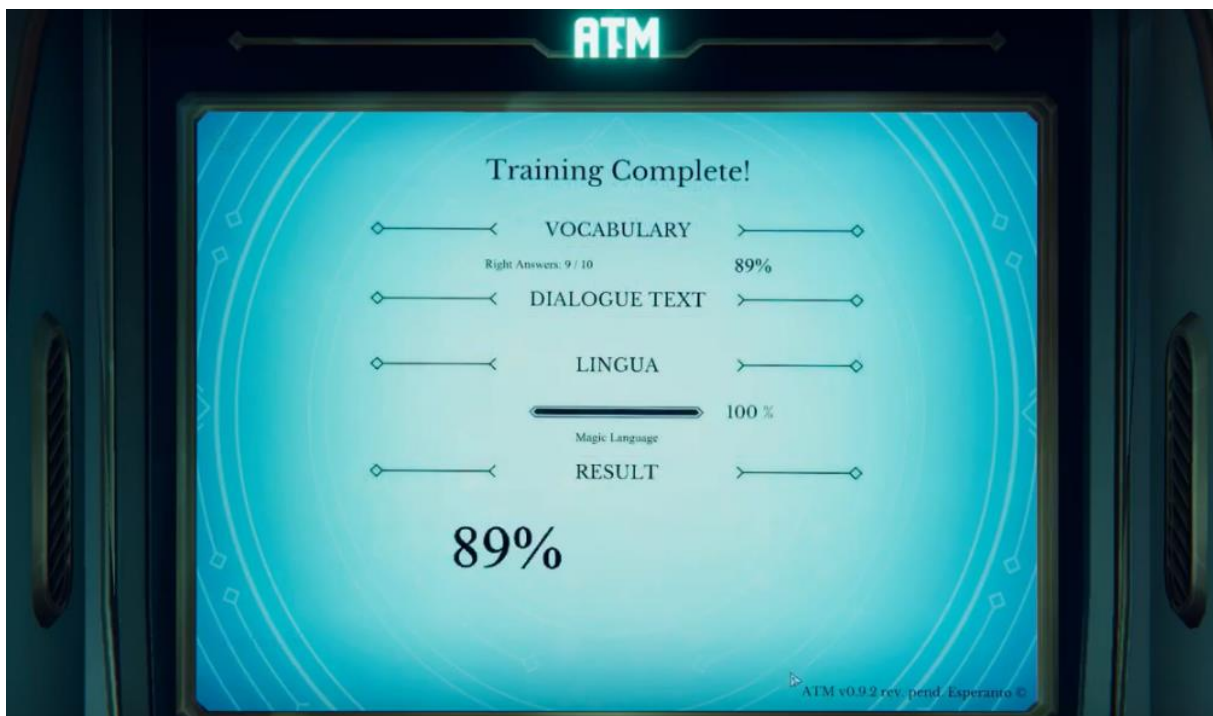


Figure 8. The vocabulary acquisition is rewarded with experience points and a “Quest completed” message. The vocabulary recall activity gives a score.

(source: VideoGamesTV, 2021)

Assess performance

Test if learning outcomes have been achieved. For example, provide a boss level that requires mastery of all concepts previously learned.



Figure 9. The player is given another quest: a mystery to solve by reading clues. They can only read them if they recall the vocabulary (source: VideoGamesTV, 2021)

Enhance retention and transfer

Help learners retain information by connecting concepts to real-world applications.

The learned vocabulary can be used in real-life.

Bridges between gameplay and learning

Ideally, the gameplay of the game merges learning and ludic actions. In the above example, the player explores the game world and learns vocabulary at the same time.

But the game also features an extrinsic approach: the combat phases where players throw spells at the enemies.



Figure 9. The extrinsic approach in Terra Alia: the combat phases do not involve serious content
(source: VideoGamesTV, 2021)

A [research paper on educational video game design](#) (Prestopnik, N. 2016) concluded that this approach works only if ludic and serious activities are bridged. For example in Terra Alia, the more the player acquires and reviews vocabulary, the more magical power they have for combat (the rewarding activity). So to fuel their ludic activity they need to practice the serious ones, which can create intrinsic motivation for the serious content (“I need to level up for my next combat”).

Conclusion

We saw an example of intrinsic and extrinsic approaches of DGBL, and the extrinsic approach works if serious and ludic content are bridged.

Resources and references

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Images

- Game images were taken from the **Terra Alia gameplay video** from **VideoGamesTV**, 2021
- Guardiola, E. (2019). [Figure 10: Example slingshot minigame in Antura and the letters]. Antura & the Letters (Arabic). ETC Press (Carnegie Mellon), DOI:[10.1184/R1/10557950](https://doi.org/10.1184/R1/10557950)



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