



Inclusive video game design ideas for a language course
Inclusion Guidelines when making a Video Game

Design a game adapted to your students

Introduction

The two pillars for keeping players playing are usability and engagement (engage-ability). Both are important because a game can be usable, yet boring, or it can be great but with frustrating usability. In this factsheet, we will focus on the usability pillar.




Terms

UX: user experience, the overall experience of a person using a product such as a website or a computer application, especially in terms of how easy or pleasing it is to use (from Oxford languages).

Inattentional blindness: when we are focused on a task, we fail to notice the stimuli that are not related to it.

Why are these guidelines needed?

A UX  approach pertains to the usability of a system, and its ability to engage its users but it also refers to inclusion considerations.

The quality of learning will be affected by many factors, such as our attention, motivation, and emotion.

For students with SLDs, it is even more important to follow these guidelines because these students can have difficulties with the workload, memory, and the assessment of information.

Memory

The more information is available to players, the less there is to learn and remember. This is called recognition instead of recall and it is why a good interface prevents players from remembering elements.




Figure 1. Example of user interface that reduces memory load (source: celiahodent.com)



Reduce the memory load of game elements to maximize it for learning content.

Attention

Although we believe that we are good at analysing our surroundings, we actually have pretty limited attentional resources.

Then, asking players to multitask as they are discovering and learning about a new game can lead them to miss out on important information due to inattention blindness .



Don't multitask: have players understand a gameplay element, then add more elements or learning content.

Guidelines

Usability

Usability is about the ability of the game to be used, which entails taking into account human limitations in terms of perception, attention, and memory.

Usability heuristics to consider when designing a game:

Signs and feedback

It gives meaningful information about the system.

Inviting signs: draw the attention to encourage the player to do something.

Informative signs: inform about a state, they should be legible but they should not draw attention too much (except if it is a critical state like 'near game over').



Figure 2. Examples of informative signs in games (source: celiahodent.com)

Feedback: every action from the player should have feedback. It helps the player understand and learn the game mechanics. It's like taking an elevator, if you press the button and there is no feedback, you mash the button, not sure if the system understood your intention, which is frustrating.



Advice: dedicate **red** for **immediate threats** and when **taking damage**.

Orange for **enemy names** or **health bars**.

Green for player's **health**

Clarity

All information conveyed must be perceived as intended and the text must be legible.

It applies to everything: text font, size, colour, contrast, interface: organization, hierarchy, context, and iconography.

Use the Gestalt laws of **Proximity, Similarity, Continuation, Closure, and Figure/Ground**.

Proximity:

We perceive objects that are close to each other as related.

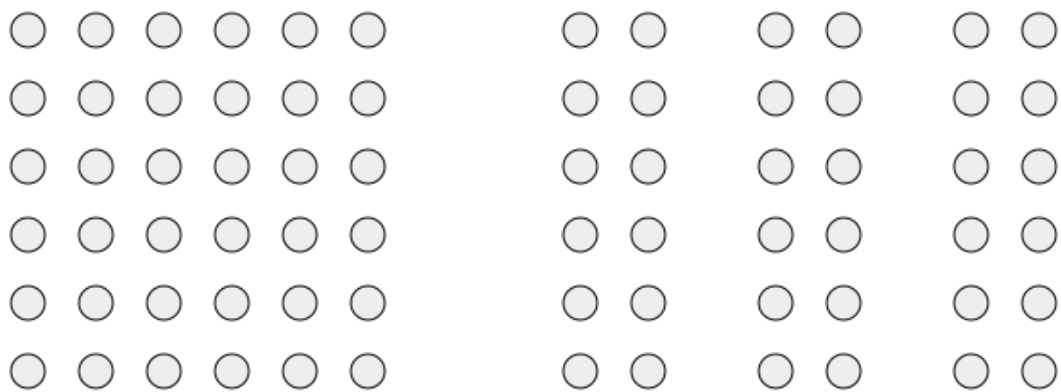


Figure 3. Example of proximity Gestalt law (source: Wikimedia Commons)

Similarity

Elements that have visual similarities (colour, shape, iconography) can be grouped together. It can help identify items that belong to similar or different categories.

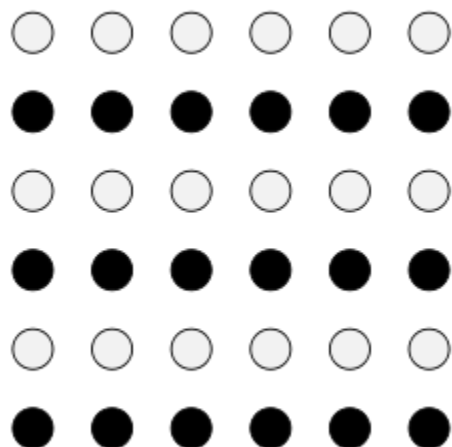


Figure 4. Example of similarity. Gestalt law (source: Wikimedia Commons)

Continuation

Continuity happens when the eye is guided to move from one object to another. A partial element within view provides an affordance that there are additional elements or interactions.

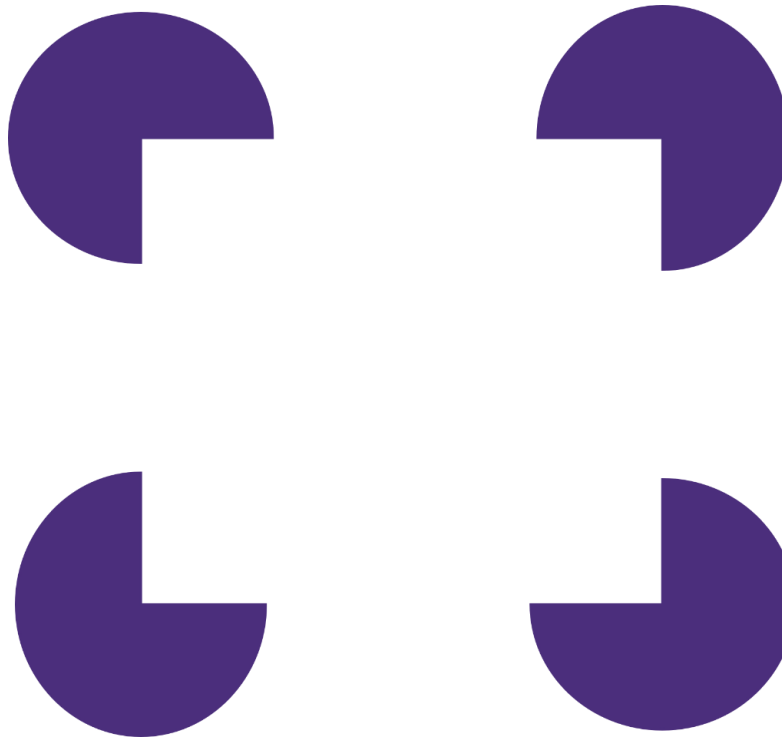


Figure 5. Example of continuation. Gestalt law

Closure

We perceive shapes as being whole even when they are incomplete. Our perception fills the visual gap. Loading states and completion meters can benefit from this.



Figure 6. Example of closure. Gestalt law (source: Wikimedia Commons)

Figure/Ground

It is our ability to separate elements that are on different planes. Our capacity to distinguish figures from backgrounds. It's invoked by layering, contrast and information hierarchy.

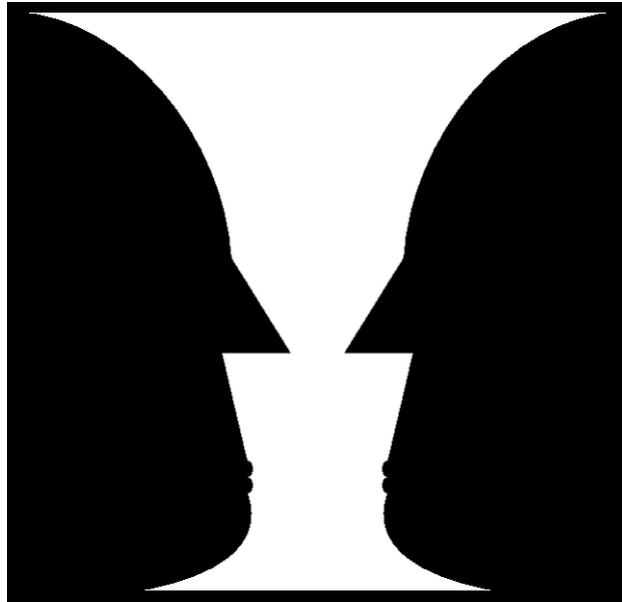


Figure 7. Example of figure-ground. Gestalt law (source: Wikimedia Commons)

Form follows function

The form of an object gives information on its function.

Similar forms should have similar functionality while different ones, should have a different function.

Consistency

Controls, UI, signs and feedback must be consistent. Else, the user will have to re-learn how to use them in every situation.

Minimum workload

One should aim to minimize the amount of work required to perform an action, both physical (number of buttons required to press) and cognitive (memory, working memory, number of elements to deal with in order to find information).

One method: recognition instead of recall.

Error prevention/recovery

Help players prevent or easily recover from errors.

For example, undo buttons or collision zones smaller than the 3D model of enemies.

Flexibility

Let player customize their interface and controls.

Conclusion

We summarized here rules and guidelines to help you make a readable game. Actions should be well-signified to the player. Signs and feedback are important for it as well as an intuitive user interface.

Resources and references

- Schell, J. (Ed.). (2008). The Art of Game Design: A book of lenses (1st ed.). Burlington, MA: Morgan Kaufmann Publishers
- Hodent, C. (2016, March 22). The Gamer's Brain, Part 2: UX of Onboarding and Player Engagement (GDC16). Retrieved from <https://celiahodent.com/gamers-brain-ux-onboarding/>
- Hodent, C. (2016, March 22). Understanding the Success of Fortnite: A UX & Psychology Perspective. Retrieved from <https://celiahodent.com/understanding-the-success-of-fortnite-ux/>
- Wheelr, H. (2018). Gestalt Principles Applied to UX Design. prototypr.io. retrieved from <https://blog.prototypr.io/gestalt-principles-applied-to-ux-design-af47bcf4bd28>

Images

- Hodent, C. (2019). [Figure 1. Example of user interface that reduces memory load}. celiahodent.com. <https://celiahodent.com/understanding-the-success-of-fortnite-ux/>
- Hodent, C. (2015). [Figure 2. Example of user interface that reduces memory load}. celiahodent.com. <https://celiahodent.com/video-game-ux-psychology/>
- Wikimedia.com. (2018). [Figure 3. Example of proximity gestalt law]. Retrieved from https://commons.wikimedia.org/wiki/File:Gestalt_proximity.svg
- Wikimedia.com. (2008). [Figure 4. Example of similarity gestalt law]. Retrieved from https://commons.wikimedia.org/wiki/File:Gestalt_proximity.svg
- Wikimedia.com. (2008). [Figure 6. Example of closure gestalt law]. Retrieved from https://commons.wikimedia.org/wiki/File:Gestalt_closure.svg
- Wikimedia.com. (2008). [Figure 7. Example of figure-ground gestalt law]. Retrieved from https://commons.wikimedia.org/wiki/File:Optical_illusion_vase.png



Co-funded by the European Union

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Project code: 2021-1-BE01-KA220-SCH-000027783

This work is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License (<http://creativecommons.org/licenses/by-nc-sa/4.0/>).

Learn more about D-ESL at: <https://www.d-esl.eu>