

Adaptation of learning content for students with
SLDs

What are Specific Learning Disorders (SLDs)?

Accessibility guidelines for players with motor disabilities

Introduction

The term “motor disability” applies to any condition that impedes sensation, movement, or coordination. There are great [adaptive controllers](#) dedicated to accessibility for the motorically impaired. But they don’t solve everything. Some barriers lie in the games themselves.



Terms

Controller rumble: Force feedback and shakes in the gamepad that support visual cues in the game (ground shakes, a damage taken).

Why are these guidelines needed?

Games are heavily based on motor interactions. Mouses and keyboards, gamepads, or smartphones, all need some fine motor skills to provide input to the computer. Thus, players with motor impairments can have hard times enjoying certain titles.

Guidelines

Controls

The first thing to do is to let players remap the controls of the game. It is fairly easy in most game engines nowadays.


It's also nice to allow the possibility to toggle a button instead of holding it and to expand it to actions that require repetitive pushing of the button: automatic modes. By pressing the button once, the player is considered either holding it or repeatedly pressing it by the game.

Some games go even further and provide an input mapping that makes it possible to play with one hand.

Have quick time events (QTE) skippable, i.e. moments where the game asked for a sequence of buttons that illustrate a cinematic action.



Figure 1. An example of QTE: in Spider-Man PS4, the player is asked to push a button repeatedly to lift heavy debris (source: spiritgamer.fr)

Also, make sure that the controller rumble  is optional. Gameplay elements should not depend on it exclusively, for example detecting an object when the character is near it by rumbling the controller. Provide a sound or visual cue instead.

Difficulty modes

Letting the player choose the difficulty is of course useful for motor disabled players, too. There is a simple way: modifying some variables of the game, enemy health, dealt damages... etc. For example, by choosing an “easy” mode, the damage required to defeat a monster might drop by 50% and thus making the combat encounters easier (less ammo required, less chance to be hit...).

But the balance of a game is very important and letting players have full control over the experience can break its vision and design. It is then a better idea to have a dedicated mode in the menu, like the assist mode of the game Celeste, where players can change the game speed, having infinite resources or health.

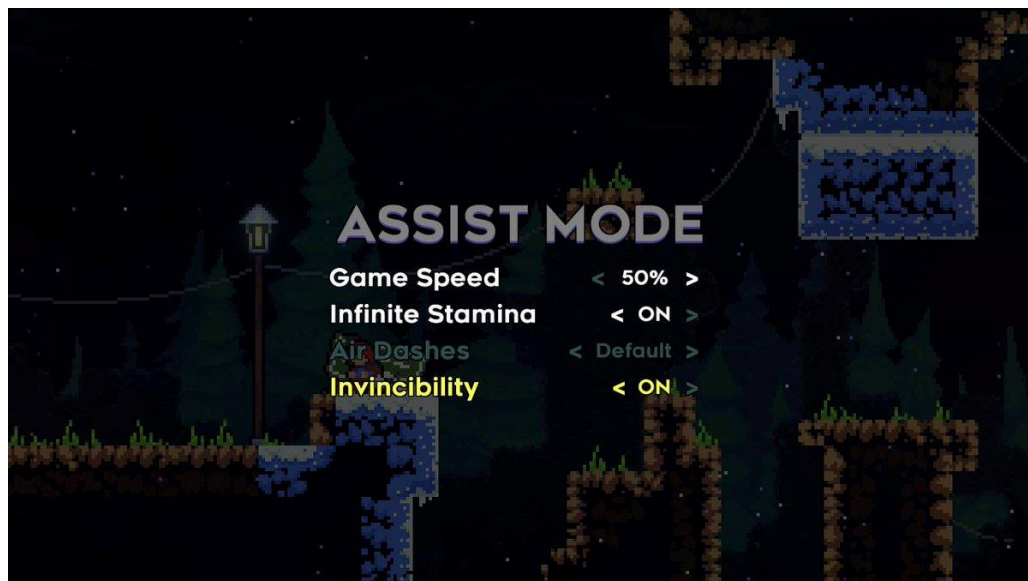


Figure 2. Assist mode in the game Celeste (Extremely OK Games, 2018) (source: <http://gameaccessibilityguidelines.com>)

It totally breaks the game's design but it is clear to the player that it isn't intended to be played this way and that it is an adaptation. Instead of another regular mode of playing the game, it is clearly mentioned as a special mode that "breaks" the game but hopefully makes it more accessible.

You can also have entire portions of the game skippable (for example combat if the player prefers the puzzles and the story, or struggles with combat).

For motor disabilities, it is crucial to let players take their time, so control of the game speed and pauses that let the player assess their surroundings are a good thing.

If you have a doubt, you can get feedback from consultancy groups or players with SLDs at <https://dagersystem.com/>.

One last thing: it is, of course, a bad idea to give condescending names to game modes. Like "baby mode" instead of easy and "for the true" instead of hard.

Conclusion

The point is to make buttons easily accessible for players. It is difficult to predict any possible input mapping combination for each disability, so leave the players the choice to remap the game themselves. Also, try to provide one-handed controls, to avoid painful input combinations that require finger stretches or strains and button holding.

Finally, let the player control game speed, and gameplay (infinite health, infinite jumps...) by clearly communicating that this is not the intended way of playing but it can help those who need accessibility features.

Resources and references

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Images

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