

Accessible Virtual World Interfaces

Blizzard Entertainment's *World of Warcraft* model

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Agenda

- Background
- Discovery: An accessible virtual world game
- About the players with disabilities
- Research and Results
- Lessons learned and opportunities

Background

- Hillbilly at heart
- Broadcasting and teaching
- PhD, Texts and Technology
- Director, UCF Office of Instructional Resources
- UCF Games Research Group

Background

- Love video games
- Congenital amputee
- Relationships between people and technology

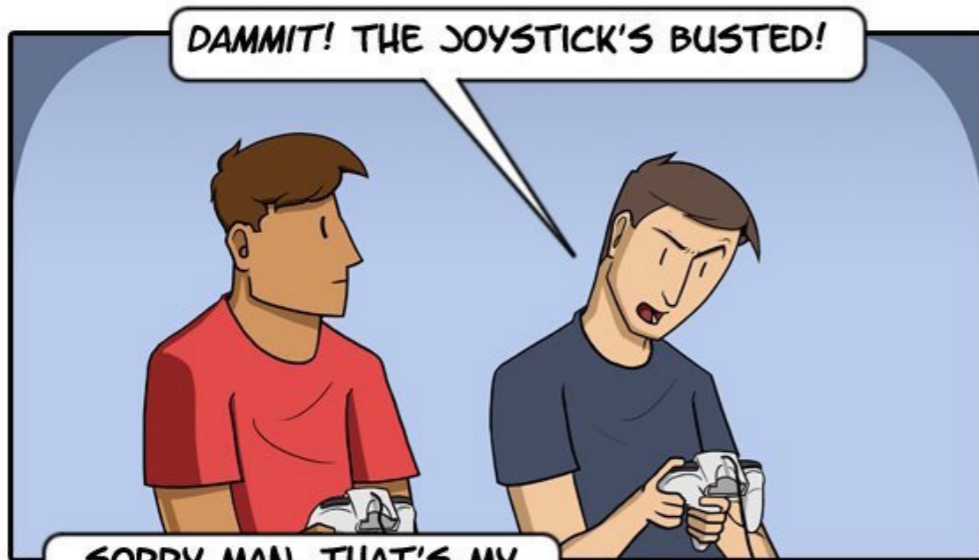


Making Controller History

Julia Lepetit & Andrew Bridgman

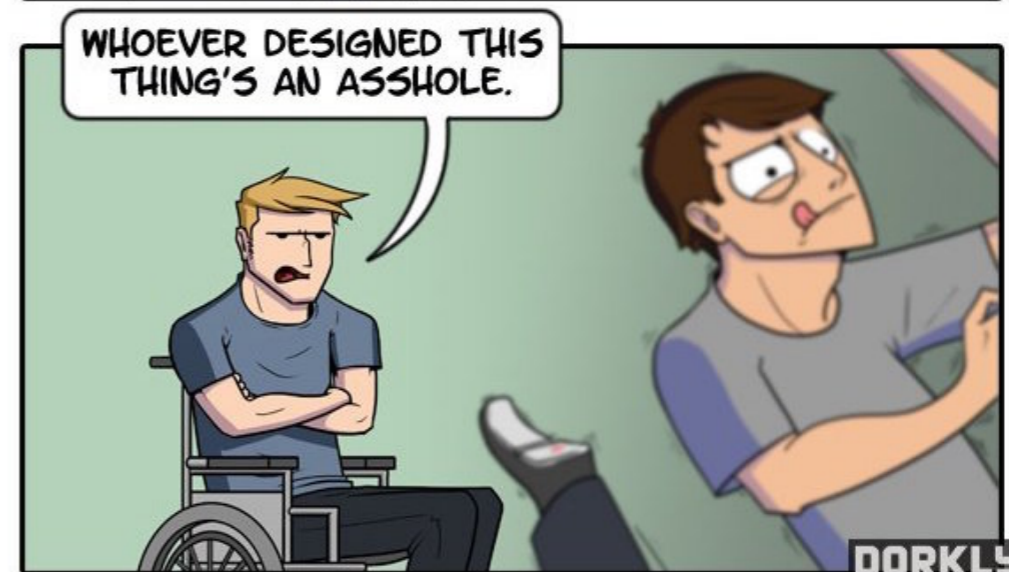
April 22, 2013

<http://www.dorkly.com/post/51443/out-of-control>



SORRY MAN, THAT'S MY ONLY OTHER CONTROLLER.

WHOEVER DESIGNED THIS THING'S AN ASSHOLE. IT'S TOO EASY TO BREAK, NOW I CAN'T EVEN PLAY.





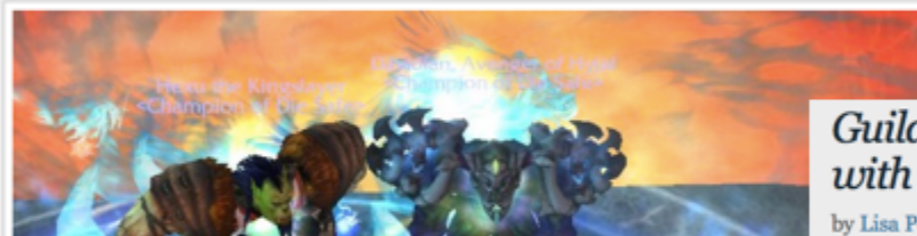
Significant Characteristics

- Real-time play
- Video-based environment
- Rich aural environment
- Textual and voice communication
- Coordination required between teams for “end-game” content



"Guide dog" player and guild embrace sightless guildmate, steer team to victory

by Lisa Poisso Jul 12th 2012 at 2:00PM



Deaf/Ventless raiding guild slices silently through heroic ToT

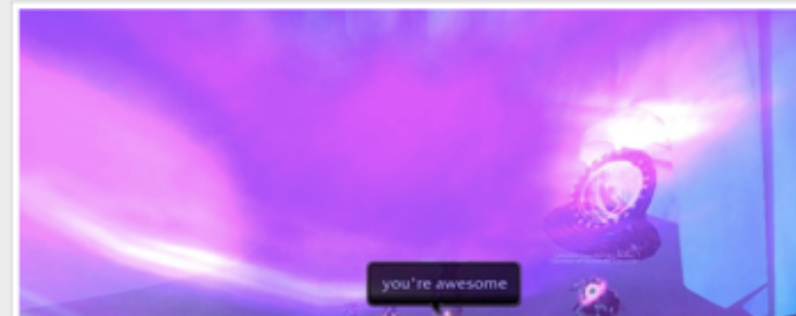
by Lisa Poisso Jul 11th 2013 at 3:00PM



How smoothly do you think your raid would run without Vent? The instant connection of voice communications makes short work of strategizing before an encounter. It allows raid leaders to direct the flow during battle, issuing new orders, calling out phases, and reminding players when to move. It allows for a certain amount of friendly banter during

Guild helps anxiety-ridden players get by with a little help from their friends

by Lisa Poisso Jul 19th 2012 at 3:00PM



Quadriplegic player establishes resource beachhead for other disabled gamers

by Lisa Poisso Apr 12th 2012 at 5:00PM

We've first go without

hout any of ng in the oice , chewing ssion,

lly blind and just fine, but rysically aybe you

15 Minutes of Fame: Holding fast to Azeroth through the journey of Alzheimer's

by Lisa Poisso Jul 14th 2011 at 2:00PM



Photo: Victoria Sutherland

From Hollywood celebrities to the guy next door, millions of people have made World of Warcraft a part of their lives. How do you play WoW? We're giving each approach its own 15 Min

15 Minutes of Fame: Legally blind player with hearing loss conquers raid healing

by Lisa Poisso Nov 3rd 2011 at 1:00PM



Ability Powered gnome builds resource node for disabled gamers

by Lisa Poisso Sep 12th 2013 at 3:00PM



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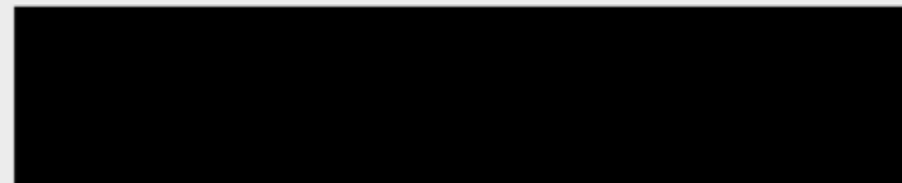
Blind player Ben Shaw on raiding and WoW for the sightless

by Lisa Poisso Mar 7th 2013 at 1:00PM



Youtube user Kephaz demonstrates how to play WoW blind

by Anne Stickney Mar 2nd 2014 at 2:00PM



She's known by many on our realm as Short but her character is Azraela. She has guild leader of Quel'Dorei's Realm first level 25 guild since she founded it in BC.

Why I'd like to nominate her has nothing to do with guild leading though. She's c like others you have covered before, and like past stories, it doesn't stop her fro raiding, PvP, or any other part of the game.

What impresses me about Short is her concern for other disabled gamers. She re started a YouTube channel called AbilityPowered where she covers tips on makin highly accessible. I asked her about it one day and found out since she started ra only is she disabled but she had raid-led colorblind, deaf and hearing-impaired. She said she's had to adjust raiding assignments to make anyone with impairme successful for years and is hoping it'll help other gamers do the same. I think sh special.

Sometimes the news tips themselves hit the nail right on the head:



Blind Guy Plays Warcraft

TheKephas on Youtube

https://youtu.be/101ZEJF5z_8?list=PL495432DE9C508380

Addons / Mods

- Blizzard structured the UI so as to be modifiable by users
- These “mods”, or “add-ons”, are written by the users in Lua with no support from Blizzard
- Any UI element can be modified and APIs exist for data that isn't part of the packaged UI

Do addons address specific disabilities of players?



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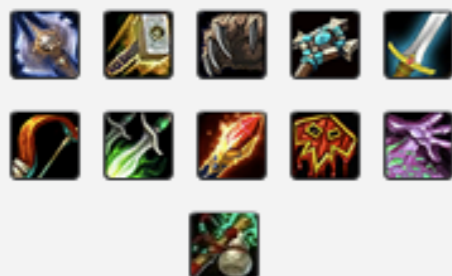


Browse Addons

Sort By Monthly Downloads

First Previous Page 1 of 196 Next Last

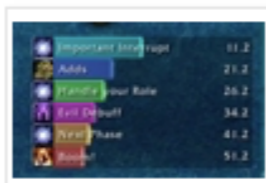
Browse by Class



Browse by Categories

All Addons

Achievements



Deadly Boss Mods

1,158,100 Monthly

Updated 22 Oct 2015

654 Likes

127,547,023 Total

Created 29 Apr 2008

Supports: 6.2.2



Recount

1,061,385 Monthly

Updated 18 Nov 2015

410 Likes

75,993,543 Total

Created 17 Aug 2007

Supports: 6.2.3



Master Plan

980,630 Monthly

Updated 2 Nov 2015

903 Likes

20,558,195 Total

Created 21 Nov 2014

Supports: 6.2.2

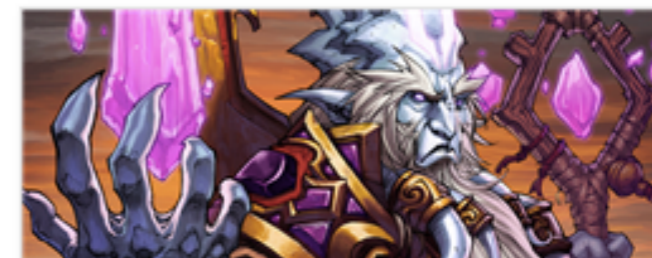
CURSE PREMIUM

UPGRADE TO PREMIUM

- Faster Download Speeds
- One Click Update All
- Addon Sync
- Addon Settings Backup

...AND MUCH MORE!

Spotlight



World of Warcraft Spotlight: Scran

3 Principles of UDL from CAST website

Principle I. Provide Multiple Means of Representation:

1. Provide options for perception: (1.1) options that customize the display of information; (1.2) options that provide alternatives for auditory information; (1.3) options that provide alternatives for visual information.
2. Provide options for language and symbols: (2.1) options that define vocabulary and symbols; (2.2) options that clarify syntax and structure; (2.3) options for decoding text or mathematical notation; (2.4) options that promote cross-linguistic understanding; (2.5) options that illustrate key concepts non-linguistically.
3. Provide options for comprehension: (3.1) options that provide or activate background knowledge; (3.2) options that highlight critical features, big ideas, and relationships; (3.3) options that guide information processing; (3.4) options that support memory and transfer.

Principle II. Provide Multiple Means of Action and Expression:

1. Provide options for physical action: (4.1) options in the mode of physical response; (4.2) options in the means of navigation; (4.3) options for accessing tools and assistive technologies.
2. Provide options for expressive skills and fluency: (5.1) options in the media for communication; (5.2) options in the tools for composition and problem solving; (5.3) options in the scaffolds for practice and performance.
3. Provide options for executive functions: (6.1) options that guide effective goal-setting; (6.2) options that support planning and strategy development; (6.3) options that facilitate managing information and resources; (6.4) options that enhance capacity for monitoring progress.

Principle III. Provide Multiple Means of Engagement:

1. Provide options for recruiting interest: (7.1) options that increase individual choice and autonomy; (7.2) options that enhance relevance, value, and authenticity; (7.3) options that reduce threats and distractions.
2. Provide options for sustaining effort and persistence: (8.1) options that heighten salience of goals and objectives; (8.2) options that vary levels of challenge and support; (8.3) options that foster collaboration and communication; (8.4) options that increase mastery-oriented feedback.
3. Provide options for self-regulation: (9.1) options that guide personal goal-setting and expectations; (9.2) options that scaffold coping skills and strategies; (9.3) options that develop self-assessment and reflection.

Full matrix of UDL principles identified in the addons

| Curse rank | Addon Name | Response mention | 1.1 | 1.2 | 1.3 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 3.1 | 3.2 | 3.3 | 3.4 | 4.1 | 4.2 | 4.3 | 5.1 | 5.2 | 5.3 | 6.1 | 6.2 | 6.3 | 6.4 | 7.1 | 7.2 | 7.3 | 8.1 | 8.2 | 8.3 | 8.4 | 9.1 | 9.2 | 9.3 | UDL score | |
|------------|---------------------------|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------|----|
| 1 | Deadly Boss Mods | x | x | x | x | x | x | x | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 31 | |
| 18 | <u>Decursive</u> | | x | x | x | x | x | x | | x | x | x | x | x | x | x | | x | x | x | x | x | x | x | | x | x | x | x | x | x | x | x | x | 29 | |
| 19 | <u>HealBot Continued</u> | x | x | x | x | x | x | x | | x | x | x | x | x | x | x | | x | x | x | x | x | x | x | | x | x | x | x | x | x | x | x | x | 29 | |
| 20 | <u>Gladius v3</u> | x | x | x | x | x | x | x | | x | x | x | x | x | x | x | x | | | x | x | x | x | x | x | x | x | x | x | | x | x | x | x | 28 | |
| 5 | Tidy Plates | x | x | x | x | x | | x | | x | x | x | x | x | x | x | | | x | x | x | x | x | x | x | x | x | x | | | x | x | x | x | 26 | |
| 16 | GTFO | | x | x | x | x | x | x | | x | x | x | x | x | | | | | | x | x | x | x | x | x | x | | x | x | x | x | x | x | x | 25 | |
| 3 | Recount | x | x | | x | | | x | | x | x | x | x | | | | x | x | x | x | x | x | x | x | x | x | x | x | | x | x | x | x | x | 24 | |
| 25 | <u>Skada</u> Damage Meter | x | x | | x | | | x | | x | x | x | x | | | | x | x | x | x | x | x | x | x | x | x | x | x | | x | x | x | x | x | 24 | |
| 31 | Quartz | x | x | x | x | x | | x | | x | x | x | x | | x | | | | | x | x | x | x | x | x | x | x | | | x | x | x | x | x | 23 | |
| 17 | Bartender4 | x | x | | x | | | x | | x | | x | x | x | x | x | x | | | x | x | x | x | x | x | x | x | | | | x | x | x | x | 22 | |
| 4 | <u>Bagnon</u> | | x | | x | x | x | | | x | x | x | x | x | | x | | | | | x | x | x | x | | x | x | x | | | x | x | x | x | 21 | |
| 14 | <u>Ackis</u> Recipe List | x | x | | x | | x | x | | x | | x | x | x | | x | x | x | x | | x | x | x | x | | | x | | | x | x | x | x | x | 21 | |
| 9 | Auctioneer | x | x | | x | x | | x | | x | x | x | x | x | | x | | | x | | x | x | x | x | | | | | | | x | x | | x | 18 | |
| 15 | <u>AtlasLoot</u> Enhanced | | x | | x | | | | | x | x | x | x | x | | x | x | | | x | x | x | x | x | | | x | x | | | | x | | | 17 | |
| 24 | <u>AskMrRobot</u> | x | x | | x | x | x | x | | x | x | x | x | | x | | | | | | x | x | x | x | | | | x | | | | x | | x | 17 | |
| 11 | <u>MoveAnything</u> | | x | | | | | | | | | | x | | x | x | x | x | | | | x | x | x | | | x | | | | x | x | x | | 13 | |
| 13 | <u>PetTracker</u> | | x | | x | | | | | x | | x | x | x | | x | | | | | | x | x | x | | | x | | | | | x | | | 12 | |
| 28 | Postal | x | x | | x | | | x | | x | | | | | x | x | | x | x | | | | x | | | | | | | | x | | | x | | 11 |
| 10 | Addon Control Panel | | x | | x | | | | | | | | x | x | x | | x | | | | | x | x | | | | | | | | | x | x | | 10 | |
| 2 | _NPCScan | x | x | x | x | | | | | | x | | | | | | | | | | | x | x | x | x | | | | | | | | x | | | 9 |
| | | | 20 | 8 | 19 | 10 | 8 | 14 | 0 | 17 | 14 | 16 | 18 | 13 | 11 | 13 | 9 | 8 | 9 | 11 | 16 | 19 | 20 | 18 | 8 | 10 | 15 | 11 | 5 | 8 | 14 | 19 | 15 | 14 | | |

Addons fit into UDL principles

“I find the icons and layout of the default UI **hard to interpret**, I can use addons to make a cleaner and more streamlined display that **only shows what I need to see.**”

“I have trouble **multi-tasking** so I need raiding addons to show me timers so I know **when to react.**”

“Addons make **mouse-only** gaming easier. Changes to UI scales, placement, lowered mouse movement, etc. all **make clicking faster & more efficient.**”

Do players with disabilities who manage their experience with addons have a “deeper” identity immersion experience with the game than players with disabilities who do not?

Principal Component Analysis of Inventory Responses

| Inventory Item | One | Two |
|--|-------------|-------------|
| Importance of Character looks compared to others | .787 | .115 |
| How often do you play to avoid real-life issues | .954 | -.215 |
| How important in the game is escaping from the real world | .826 | .021 |
| How often do you role-play your character | .879 | -.010 |
| How often do you play to relax from work | .740 | .086 |
| How important is that your characters outfit matches in color | .791 | .005 |
| How often do you make up stories/histories for your characters | .540 | .300 |
| How important is it to be immersed in the fantasy world | .776 | .098 |
| How much time do you spend customizing your character during creation | .772 | -.047 |
| How much do you enjoy finding quest, NPC's or locations others do not know | .047 | .873 |
| How much do you enjoy collecting distinctive objects or clothing that have no functional value in the game | .092 | .750 |
| How much do you enjoy exploring the world – simply to explore the world | -.053 | .884 |
| How enjoyable is it to try out new roles and personalities with your characters | .257 | .618 |
| How enjoyable is it exploring every map or zone in the world | -.189 | .954 |
| Alpha Reliability | .93 | .89 |
| Component Correlation = .63 | | |

Discovery

(and a little role-play)

- How much do you enjoy finding quest, NPC's or locations others do not know?
- How much do you enjoy collecting distinctive objects or clothing that have no functional value in the game?
- How much do you enjoy exploring the world – simply to explore the world?
- How enjoyable is it exploring every map or zone in the world?
- How enjoyable is it to try out new roles and personalities with your characters?

- McLuhan, *Understanding Media*
 - Media as prosthetic
 - Zimmerman and Salen
 - Three schema for understanding games: Rules, Play, Culture
- 1. Rules:** the system of play (interface embodies rules)
Navigation and information feedback
 - 2. Play:** the space between gamer and game where experience takes place
 - 3. Culture:** the design of a game embodies the values with which it was made

Lesson 1

It is possible for people with many different ability levels and challenges to engage with, find meaning within, and enjoy virtual worlds.

Lesson 2

Immersion in a virtual environment for a person with a disability is enhanced (enabled?) by the community of that environment as well as the technologies of the environment.

(Create places people want to populate!)

Lesson 3

Accessibility is a natural tendency for environments where users can create and / or modify the UI themselves.

Unfortunately this is easier in closed environments.

Lesson 4

Accessibility is likely to improve over time so we must build worlds / environments that will be persistent.

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The impact of user-generated interfaces on the participation of users with a disability in virtual environments:

Blizzard Entertainment's World of Warcraft model

<https://login.ezproxy.net.ucf.edu/login?auth=shibb&url=http://search.ebscohost.com/login.aspx?direct=true&db=cat00846a&AN=ucfl.033397193&site=eds-live&scope=site>