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11-2022

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“Forensic Analysis” Thinking: Promoting Equity of Access for All Persons

Stephen Gilson, PhD. and Elizabeth DePoy, PhD.

Introduction

While forensic analysis often conjures images of criminal justice investigations, it is actually a valuable and innovative analytic process to identify “what went wrong” as the empirical basis to inform creative repair and advancement. This poster presents an innovative forensic educational process and its evaluation in a disability studies curriculum which engages students in analyzing and advancing responses to inequitable access in all arenas of health and welfare.

Background

Forensic analysis has been used very successfully in several fields including criminal justice, engineering, and computer science, to analyze failures of current systems and inform the development of careful and systematic actions as the basis for remediation.

Health is a broad concept as is “whole person.”

As stated by Fisher (2018) health is “A state of complete physical, mental, social, [and spiritual] wellbeing, and not merely the absence of disease or infirmity”.

Thus, access to health equity speaks to complex wellbeing in all arenas of life. Equality of access as well as equity and respect for diversity of humanness must be considered in all strategies to foster health equity for the full range of humanness.

Given that accessibility itself is an ongoing process of identifying barriers and strategies to eliminate them, forensic analysis, also an iterative process, when applied to health accessibility, provides the precision tools for ongoing analysis and advancement.

Forensic Analysis Tools

- 1) What fails, why and for whom?
- 2) What does not fail and why not?
- 3) How can the failure identify a path or paths for change?
- 4) What is/are the process/es?

Levels of Access Framework

Foundation: Knowing about the products/services—it has to be on our radar

Next level up: Forensic observation and analysis of the products/services

Action level: Thinking and Doing – Using/developing the products/services

References

DePoy, E., & Gilson, S.F. (2012). *Emerging Thoughts in Disability and Humanness*. London, UK, Anthem.

Rutherford, A. (2019). *Critical Thinkers: Methods for Clear Thinking and Analysis in Everyday Situations from the Greatest Thinkers in History*. ARB Publisher.

Gault, G. (2019). *Failure Analysis: Who needs it?* CreateSpace Independent Publishing Platform.

Forensic Analysis Assignment Guidelines—Focus Beyond Access to Usability

Identify product/s or service/s that:

- is not accessible to one or more people who need/want it, why?
- is not usable, why?
- is accessible but not usable, why?
- is accessible, usable but you hate to use it, why?

Now fix the failures of each.

Identify the failures of your own solution.

Forensic Analysis of Electric Wheelchair

Emma Williams: “I imagined this device as almost a mini-car, thus expanding the ways it could be used and expanding the types of people who would be interested. Just as every body is different and has different needs, this vehicle/device does not have one set design. The only way to accommodate the needs of everyone, in my mind, was to create a device that could be altered to personal choice and need.”

- Stigmatizing design.
- Limited to flat terrain.
- Lack of coverage for all weather conditions.
- One design does not fit all.
- One drive option limits usability.



Solutions

- Add GPS,
- Diverse designs and colors,
- Bluetooth,
- Multiple drive options and features that are purpose dependent, and
- Consider user needs and preferences.

What Fails in New Design

- Many features need to be flexible.
- Selection needs to be a menu of options.
- No standing option.
- Transfer difficulties.
- No option for another individual to accompany primary user.
- Did not consider speed.



Exemplars of Individual Student Projects

Area of Focus	What is Wrong	How to Make it Right	What is wrong with the solution proposed?
Food Access	Food access is charity	Inclusive gardening, expanded access to gardening sites	Gardener embodied limitations and barriers, economic barriers
Health Literacy Access	Limited health literacy – linked to greater use of emergency services; lower use of preventive services	Multiple venues for access. Easily translated into alternative literacy and languages. Can be accessed through different senses.	How does the potential consumer know where and how to access and use?
Accessibility to virtual gaming	Visual inaccessibility – due to rich graphics, poor controller design, too many buttons, games that do not allow user to use their own controller, requires upper extremities.	Captioning, universal controller, precise voice control, attend to color-blink options with use of different colors, haptic feedback, multi-sensory access and use.	Closed captions confused with subtitles; need for re-mappable keys; where color communicates necessary game play elements; and additional multi-sensory symbol or indicator should be used.

The evaluation examined the formative extent to which forensic analysis was learned, and the outcome assessment of how this procedure identified barriers and then stimulated the development of innovation to promote full and equitable access. Of particular importance in the evaluation was the assessment of students’ forensic analysis of their own work, such that access is understood and practiced as a never-ending process.

Course Evaluation Excerpts

Solid readings backed up by two excellent professors who are keenly knowledgeable in the subject and have a broad range of experience to back up their teaching.