

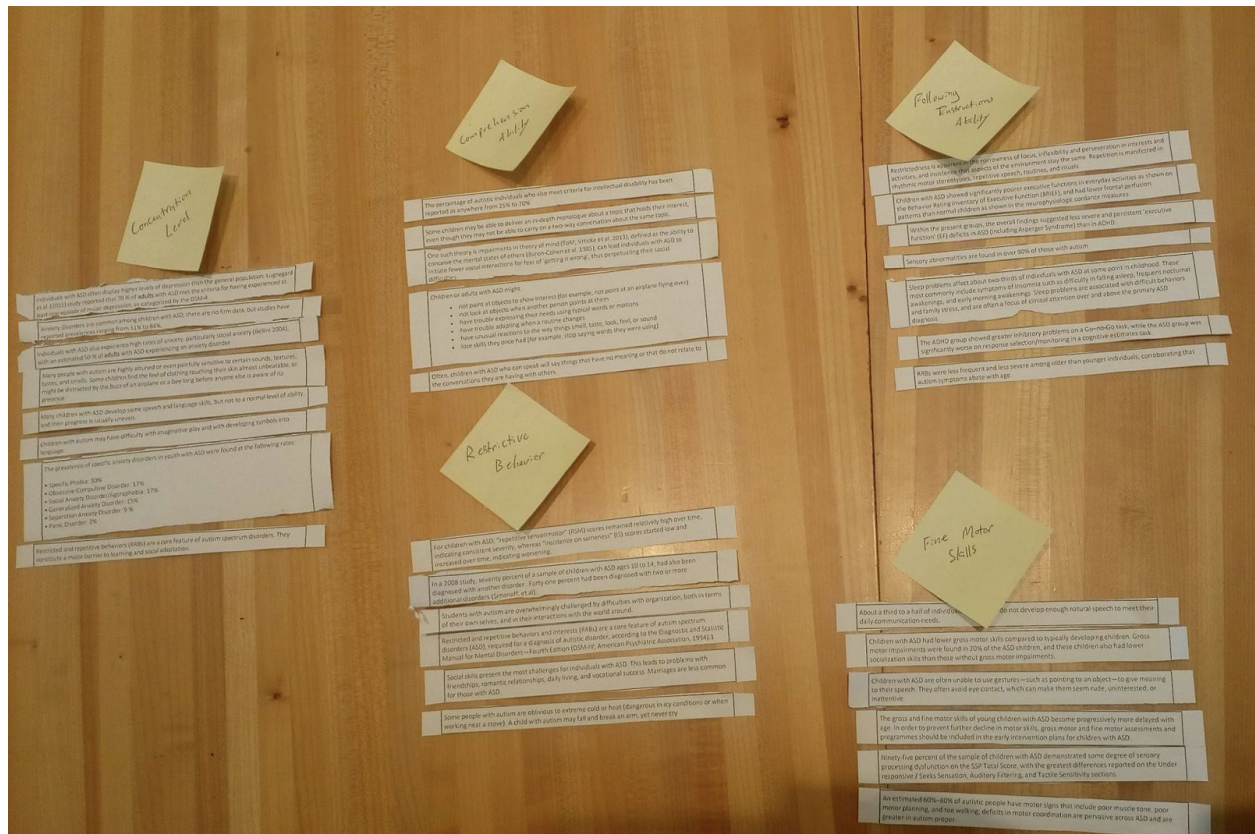
CS 519: Inclusive Design

Project Installment #3

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35
Thanks

Underserved Population:

1.a Affinity Diagram



1.b List of attributes:

1. Comprehension ability
2. Restrictive behavior
3. Ability to follow instructions
4. Fine motor skills
5. Concentration level

1.c List of data sources and which label they ended up under

	Data Source	Attribute(s)
1	Matthew Hotton, Sarah Coles. The Effectiveness of Social Skills Training Groups for Individuals with Autism Spectrum Disorder. Rev J Autism Dev Disord (2016) 3:68–81 https://link.springer.com/content/pdf/10.1007%2Fs40489-015-0066-5.pdf	Comprehension ability, Concentration level
2	Landa R. Early communication development and intervention for children with autism. Mental Retardation and Developmental Disabilities Research Reviews. 2007 (1): 16–25. https://doi.org/10.1002%2Fmrdd.20134 .	Concentration level
3	Jennifer Richler, Marisela Huerta, Somer L. Bishop and Catherine Lord. Developmental trajectories of restricted and repetitive behaviors and interests in children with autism spectrum disorders. Development and Psychopathology Volume 22, Issue 1 February 2010,. 55-69 https://doi.org/10.1017/S0954579409990265	Restrictive behaviour, Comprehension ability
4	Anna Merrill, Anxiety and Autism Spectrum Disorders. https://www.iidc.indiana.edu/pages/anxiety-and-autism-spectrum-disorders	Concentration levels, Restrictive behaviour
5	Autism Spectrum Disorder: Communication Problems in Children. https://www.nidcd.nih.gov/health/autism-spectrum-disorder-communication-problems-children	Comprehension ability, Concentration level, Fine motor skills
6	White, Susan W. et al. "Anxiety in Children and Adolescents with Autism Spectrum Disorders." Clinical psychology review 29.3 (2009): 216–229. PMC. Web. 1 Nov. 2017. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2692135/	Comprehension ability, Concentration levels
7	Noens I, van Berckelaer-Onnes I, Verpoorten R, van Duijn G. The ComFor: an instrument for the indication of augmentative communication in people with autism and intellectual disability . Intellect Disabil Res. 50 (9): 621–32. PMID 16901289. doi: https://doi.org/10.1111%2Fj.1365-2788.2006.00807.x .	Fine motor skills

8	Autism Survey. https://www.autismspeaks.org/sites/default/files/sctk_about_autism.pdf	Restrictive behaviour, Concentration level
9	Esbensen, A.J., Seltzer, M.M., Lam, K.S.L. et al. J Autism Dev Disord (2009) 39: 57. https://doi.org/10.1007/s10803-008-0599-x	Ability to follow instructions
10	Gena P. Barnhill. Outcomes in Adults With Asperger Syndrome. Focus on Autism and Other Developmental Disabilities Vol 22, Issue 2, pp. 116 - 126 https://doi.org/10.1177%2F10883576070220020301	Ability to follow instructions
11	Facts About ASD https://www.cdc.gov/ncbddd/autism/facts.html	Comprehension ability
12	Amanda L.Richdale, Kimberly A.Schreckbc. Sleep problems in autism spectrum disorders: Prevalence, nature, & possible biopsychosocial aetiologies. Sleep Medicine Reviews, Volume 13, Issue 6, December 2009, Pages 403-411. http://www.sciencedirect.com/science/article/pii/S1087079209000082?via%3Dihub	Ability to follow instructions
13	M. Dawson, L. MottronM.A. Gernsbacher. Learning in Autism. Learning and Memory: A Comprehensive Reference 2008, Pages 759–772. http://www.sciencedirect.com/science/article/pii/B9780123705099001522	Comprehension ability
14	Daniel H. Geschwind. Advances in Autism. Annual Review of Medicine, Vol. 60:367-380 (Volume publication date February 2009) https://doi.org/10.1146/annurev.med.60.053107.121225	Fine motor skills
15	Lloyd, Meghann, Megan MacDonald, and Catherine Lord. “Motor Skills of Toddlers with Autism Spectrum Disorders.” Autism : the international journal of research and practice 17.2 (2013): 133–146. PMC. Web. 1 Nov. 2017. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3188325/	Ability to follow instructions, Fine motor skills

16	Hardiono D.Pusponegoro, Pustika Efar, Soedjatmiko, Amanda Soebadi, Agus Firmansy, Hui-JuChen, Kun-LongHung. Gross Motor Profile and Its Association with Socialization Skills in Children with Autism Spectrum Disorders. Pediatrics & Neonatology, Volume 57, Issue 6, Dec 2016, Pages 501-507. http://www.sciencedirect.com/science/article/pii/S1875957216300225	Fine motor skills
17	Agnes S.Chan, Mei-chun Cheung, Yvonne M.Y.Han, Sophia L.Sze, Winnie W.Leung, Hok SumMan, Cho YeeTo. Executive function deficits and neural discordance in children with Autism Spectrum Disorders. Clinical Neurophysiology, Volume 120, Issue 6, June 2009, Pages 1107-1115. http://www.sciencedirect.com/science/article/pii/S1388245709003010	Ability to follow instructions
18	Scott D. Tomchek, Winnie Dunn. Sensory Processing in Children With and Without Autism: A Comparative Study Using the Short Sensory Profile. American Journal of Occupational Therapy, March/April 2007, Vol. 61, 190-200. doi:10.5014/ajot.61.2.190 https://ajot.aota.org/article.aspx?articleid=1866937	Fine motor skills
19	Leekam, S. R., Prior, M. R., & Uljarevic, M. (2011). Restricted and repetitive behaviors in autism spectrum disorders: A review of research in the last decade. Psychological Bulletin, 137(4), 562-593. http://dx.doi.org/10.1037/a0023341	Concentration levels, Ability to follow instructions, Restrictive behaviour

1.d - Persona Skeletons:

Skeleton #1

Girl, age 7-9

Comprehension ability

- Finds easy to read books with more pictures and symbols
- Understands things better if explained with some analogy
- Develops interest in learning if it's speed is slow with some revision and activities

Ability to follow instructions

- Often gets confused while following a sequence of instructions given in one go
- Find challenges in interpreting gestures and responding to them



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- Expects simple and specific stepwise instructions and acknowledgement after each step

Concentration level

- Gets stuck with some thought or question and loses focus from the activities in progress
- Finds difficulty concentrating when multiple things are happening in the context she is present
- Loses focus easily if any activity is not engaging with multiple acknowledgements

Skeleton #2

Boy, age 5-9

Restrictive Behaviors

- Feels hard to transition from one web page to another.
- Becomes very agitated if the themes of a web page changed.
- Only interested in 3-5 movies and watch them over and over again.

Fine Motor Skills

- Has difficulty in movement and motor planning.
- Has slight trouble with pointing, grasping, and withholding on to or letting go of objects.

Concentration Level

- Can keep his attraction on things he likes and hard to focus on things that don't interest him.
- Easily gets distracted by background noise, bright lights, and hunger.

Skeleton #3

Boy, age 6-7

Comprehension Ability

- Likes to read books with few numbers of words on each page and limited pictures
- Likes to revisit problems to understand concepts better
- Develops deeper understanding if a new concept is introduced and related to something he already knows and likes

Restrictive Behavior

- Will often be agitated enough to give up on a website if features aren't in similar places across pages
- Will only watch one TV show and often gets distracted during new episodes
- Must go to bed, wake up, and eat meals at the same time every day otherwise he will be extremely agitated

Concentration Level

- See bullet 2 under Restrictive Behavior
- Can only do one thing at a time, for example he can't work on homework with the TV on
- Often can talk for hours on subjects he is passionate about and fixates on them, but subjects he is not passionate about he will barely give the time of day

1.e - Prioritized Persona Skeletons:

Persona Skeleton	Priority
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Skeleton 1	1
Skeleton 2	3
Skeleton 3	2

Mainstream Population:

2.a, 2.b - Assumptions:

Our mainstreamer can grasp new information quickly and process reading passages. They do not restrict behavior and are good with change. Our mainstreamer is able to follow simple step-by-step directions. They have high-functioning high motor skills. They are able to focus on their current task. Our mainstreamer would be using our software because it provides an engaging way for students to learn the content while satisfying various learning styles through the usage of videos, descriptions, and pictures.

2.c Persona skeletons:

Skeleton #1:

Girl, age 7-9

Comprehension Ability

- Likes to read books about 400-550 words in length
- Can read a passage and comprehend the words
- Can connect situations happening in stories to previous situations

Concentration Level

- Can focus fully on one task at hand
- Cannot multitask, finds it overwhelming
- Finds simple tasks boring

Ability to Follow Instructions

- Can complete more complicated tasks, like making a peanut butter and jelly sandwich

Skeleton #2:

Boy, age 5-7

Fine Motor Skills

- Hand movements are stable and not shaky
- Can manage any task requiring dexterity
- Can use a computer mouse without problem

Restrictive Behavior

- Good with change

- Likes new and different things, constantly finding new websites to go on

Ability to Follow Instructions

- Can complete up to 2-3 step tasks
- Can follow simple game rules

2.d - Prioritized Persona skeletons

Persona Skeleton	Priority
Skeleton 1	1
Skeleton 2	2