Assignment P5

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1 QUESTION #1 - COMPUTER SCIENCE PROMPT

1.1 Positive Effect: Online Education enables women to pursue their dreams even after having kids

Women, after having kids, might not have the time and energy to enroll and pursue higher studies. The first few years after childbirth could demand the mother's full attention towards her children since that is the very nature of the whole nature's design. Physically and mentally, all that she could think of is only about her kids. I think in this aspect, an online graduate program being offered by a prestigious Computing school like Georgia Tech might definitely benefit the mothers to pursue their dreams right at the comfort of their home.

Asynchronous: The asynchronous nature of the program benefits almost all the users by providing them flexibility.
Low-Cost: In terms of cost effectiveness, OMSCS program is 1/8th of the on-campus MS cost, which is relatively lower than the on-campus graduate degree program, though it provides the same materials and assignments to both the formats.
Informative lectures: The lectures are great. Explaining profound ideas in a comprehensive manner is one of the greatest assets of the OMSCS program (though this might have to be implemented across all the courses).

Most of the women are pushed to discontinue their work or sometimes their dreams to pursue higher education due to their family situation. In my opinion, such online graduate programs would benefit this sect more, by providing them the required flexibility but at the same time enabling them to experience learning that is on par with the on-campus graduate programs.

1.2 Negative repercussion:Students might feel isolated

The very element of the OMSCS program being online could make the students feel disconnected/isolated.

1. A conventional classroom would let the students to directly connect with the Professor.

2. A student might gain more from inter-personal skills rather than from just learning the concepts. Though Ed forums provide a platform for the students to connect with other students, it might still not feel like having a one-to-one conversation with the schoolmates.

1.3 Structuring the program to retain the positive effects but limiting the negative repercussion:

1.3.1 *Build Confidence through programs*

Though the OMSCS program was designed targeting the working professionals, it is essential to broaden up the perspective and look at the other positive happenstance that it can make. It has the capability of helping young mothers, international students, or other minority sects who might have otherwise missed the opportunity to learn further. However, being a mother could be difficult. Post-partum is not easy and it might even last for an year after child birth (Bradley, 2020). In order to help such students, a self-help program can be designed which could devise a strategy to help young mothers who have enrolled in the program to manage both their studies and the babies, apart from providing healing methods like yoga, meditation etcetera.

1.3.2 *Networking Opportunities*

As a continual effort of the above suggestion, a networking group can be organized for all the mothers and fathers who have been enrolled in the program. It creates a sense of being and boosts their self confidence by letting them know that they are not alone. It could create a sense of belonging (Hayes, 2019b) to these students.

1.3.3 *Live lectures once in a month*

In my opinion, a live lecture once in a month can help OMSCS students to connect more with the Professor. It can be recorded for the benefit of all the students who might not be able to attend the live class. This might help the students feel less isolated.

2 QUESTION #2 - COMPUTER SCIENCE PROMPT

2.1 Identify an area you encounter regularly where political motivations are determining the design of technology. First, describe the area you've selected.

Area Selected: Facebook.

Facebook was created with the main intention of staying connected with the friends. But eventually, it became a huge factor in bringing about a societal change as well, since it allowed the users to share their opinions with the outside world.

2.2 describe the stakeholders in that area, including their motivations. Any interesting technology will likely have at least three groups of stakeholders.

2.2.1 *Primary Stakeholders*

The primary stakeholders can be categorized into three:

Personal Account—Social media was initially designed to connect with people, for networking, to stay in touch with their friends. These were the primary stakeholders the social media like Facebook or Instagram was developed for. Their primary intention is to announce/share their life's important decisions, to their circle of friends and family. They are the users who would prefer to have their account personal.

Influencers—The primary users who mostly posts pictures and publishes posts that might be influential and are being followed by many. These users are active in the social media and can be categorized as creators or influencers/celebrities. They have certain features designed specifically to carry out their task.

Business Account—These are users who use the social media to promote their business or brands. Facebook has been designed in such a way that these accounts have specific features that would allow them to go about doing their task, seamlessly.

2.2.2 *Secondary Stakeholders*

The Watchers—These are the users who simply watch others' posts. They would simply have created an account to watch what is happening in others' lives, something similar to 'window shopping', may be. Their main intention could be entertainment/information.

2.2.3 *Tertiary Stakeholders*

1. The family members and friends of the secondary stakeholders.
2. Others who might be contacted by the secondary users like shops or brands.

2.3 describe at least three ways those motivations are specifically affecting the design of the technology in that area. If you're on the right track, you'll likely find the motivations are in conflict.

There can be positives as well as negative repercussions as a result of how the tool is being used by different types of stakeholders.
1. Facebook allows the primary stakeholder, that is any account holder to create a community page where like minded people can come together and discuss things relevant to the topic of the page. For example, a community called Breastfeeding Support for Indian Mothers(Breasfeeding Support for Indian Mothers, n.d.) was created in 2019 to bring awareness about breastfeeding support amongst the Indian mothers. This is an example of how the primary stakeholders could affect the design of the technology. Though Facebook was not really created to bring about a societal change, the stakeholders made use of the technology to bring about a positive change.
2. The Watchers are generally the ones who might get influenced by the posts of the primary stakeholders. In turn, their families would be affected by these secondary stakeholders who would try to implement some of the strategies posted in the social media by the primary stakeholders, thus creating the tertiary stakeholders, indirectly. The watchers' intention was just to have a peep into others' lives but they ultimately end up getting influenced (affected) by the technology.
3.Cyber bullying is a negative effect of social media. Though Facebook was not created to have a negative impact on any of its users, it does allow fake profiles to throw negative comments and spread hatred around.

3 QUESTION #3

3.1 Paper 1: Understanding Parenting Stress through Co-designed Self-Trackers (Jo et al., 2020)

Authors: Eunkyung Jo, Austin L. Toombs, Hwajung Hong Colin M. Gray

Summary: This paper explores on how new parents can make use of flexible self-tracking tool for tracking their Personal Informatics(PI)that could potentially help in their stress management. The method involved recruiting five new immigrant mothers who knew each other, and spoke Korean. The participants were recruited from the same cultural background in order to make them feel at ease and to avoid lurking variables. They were provided with an Android mobile phone with the OmniTrack application installed. They were requested to track their daily activities using worksheets for two weeks to note down the main cause of parenting stress. The self-tracking enabled the users to have a better understanding of their life, discover what really made them happy and have discussion with their spouses with the data derived from it. The research was also focused on social self-tracking. Unlike the first and second workshop where the interviews happened on a one-on-one basis, the third workshop allowed the participants to mingle, to analyze whether social self-tracking would benefit or hinder the parents' mental wellness. Further, the paper discusses about how to manage stress in the daily lives of parents, the role the spouses play in stress management and how to cultivate positivity through the tracking process. With respect to social self-tracking, the paper suggests that it would help in developing self-knowledge and tracking both the parents' mental wellness for better stress management. Further, the authors list down the limitations of the research.

3.2 describe why you find this paper interesting or why you selected it for this assignment

Being a triplets mother, I have undergone stress and post-partum depression personally and had even wondered why no application is available that could help new parents with their stress management and mental wellbeing. This is why I found this paper interesting since I could relate to it.

3.3 Paper 2: "My blood sugar is higher on the weekends": Finding a Role for Context and Context-Awareness in the Design of Health Self-Management Technology (Raj et al., 2019)

Authors: Shriti Raj, Kelsey Toporski, Ashley Garrity, Joyce M. Lee, Mark W. Newman

Summary: This paper states that context-aware health self-management technology is capable of delivering support according to the needs of the users, to patients with prevailing chronic health conditions like Diabetes Type -1. An empirical study was conducted with 15 adolescents(13-17 years of age) with Type 1 Diabetes and their caregivers to design systems using context and context-awareness to support self-care. The data collection was carried out in three phases, an initial interview, 3-week diary study, and the exit interview. The participants were asked to label and save the frequently visited locations(contexts) in the software tool, DReflect, apart from logging their meals, Blood Glucose number, insulin, mood, other contextual factors that could affect their self-care management using hashtags and notes.

The Findings introduces the notion of contextual frames, a phenomenological (subjective) concept of the user experiences relative to the participants involved. The paper describes the role of other factors, like Food, Physical Activity, Insulin, Emotional State, People and Attitudes, in the contextual frames. The paper, based on its empirical analysis, provides design implication methods that can be adopted as guidelines while designing context-aware systems which includes using the contextual frames and human intervention in order to avoid errors due to inaccuracy or precision by the systems.

3.4 describe why you find this paper interesting or why you selected it for this assignment.

I have two reasons for selecting this paper.
1. Diabetes runs in my family, so it always interests me to learn more about it. And I had done a project in CS6440: IHI, related to Diabetes self-management.
2. Since I have second-hand experience in managing Diabetes(My dad has Diabetes and I mostly manage his dosage), thought context-aware dosage would be of great help , since I generally have to push my dad in doing things(like going for a walk, taking his insulin).

4 QUESTION #4

4.1 Paper 1: Detecting Gender Stereotypes in Children Digital StoryTelling (Rubegni et al., 2019).

Conference Chosen: Interaction Design and Children.
Authors: Elisa Rubegni, Monica Landoni, Antonella De Angeli, Letizia Jaccheri
Summary: The aim of the paper is to detect the gender stereotypes that exist in multimedia created by children using Digital Story Telling(DST) and reducing its effect by proposing new processes and tools. DST is the use of a mixture of digital media, including text, pictures, recorded audio narration, music and video to tell stories. In order to detect the gender stereotypes in the stories, a methodology was devised which was made of different metrics and five lenses that include, Role, Embodiment, Personality, Agency, and Emotion. The study was conducted with 83 children aged 11-12 years using NAM(Narrative Activity Model). Groups were created consisting of a 5 all girls group, 9 all-boys group and another mixed group of 10 (M=2, F=2). The analysis describes how different lenses were used to gauge the gender stereotypes and also attributes that the same methodology can be used to look for different stereotypes using the same artefacts. As a result of the study, an evaluation methodology was formulated that aims to analyze the persistence of gender-normative behavior and stereotypes that exist in multimedia produced by children.

4.2 describe why you find this paper interesting or why you selected it for this assignment.

Being born in India and in a conservative family, and being a woman, I have been conditioned to behave in a certain manner right from my childhood. Though I have questioned and revolted against most of it, there still exists gender roles and stereotypes in our society that I always give in. Now, a mother of three toddler girls, am very conscious about not ever influencing them into this gender stereotypes, have developed a liking towards this topic and I try to read any article and book that talks about attenuating gender stereotypes.

4.3 Paper 2: Designing IoT Resources to support outdoor play for children (Dylan et al., 2020).

Conference Chosen: International Conference on Human-Computer Interaction with Mobile Devices and Services.

Authors: Thomas Dylan, Gavin Wood, Abigail C. Durrant, John Vines, Pablo E. Torres, Philip I. N. Ulrich, Mutlu Cukurova, Amanda Carr, Sena Çerçi, Shaun Lawson

Summary: With parents being over-protective, children's outdoor play has been reducing significantly in the recent days. This paper discusses about a research that enables the children to play outdoor using IoT Resources and also provides qualitative insights regarding the social and physical interactions amongst the participants. The paper discusses about a RtD(Research-through-Design) approach 'in the wild' meaning that the prototypes that were developed enabled the children's free play by allowing them to alter their game on the go and be innovative. As part of the research, four prototypes were developed. Play Poles, Play Cans, Beacon Boxes, Play Watch. These prototypes were embedded with BBC micro:bit to enable connection and data sharing (local network for safety). The data collection was carried out over 20 sessions, each ranging between 1 and 3 hours in length that were hosted in two different sites, BirchTree and BeKids, two community centers in the UK. The participants were of age ranging between 7 and 12 years and the group sizes ranged from a maximum of 12 to a minimum of 4. The paper describes their claim that the developed prototypes help in motivating active play without the children realizing that they were actually exercising, apart from explaining the other social benefits of group play. Further, the research emphasizes on the benefits of children's outdoor play and the significance of the IoT technologies that can support new forms of active free outdoor play amongst children.

4.4 describe why you find this paper interesting or why you selected it for this assignment.

With the advent of the video games and too many kids' videos, it has become difficult to make the kids go out and play. Staying home and watching TV or playing video games all the time, could further cause other negative repercussions amongst the kids like obesity, being unsocial, may even lead to other psychological factors. So, I think such merge of technology with outdoor play could make both the children, by letting them make use of innovative, yet simple technologies and the parents, happy.

5 REFERENCES

[1]Nietzel, M. T. (2021, July 4). *Georgia Tech's Online MS In Computer Science Continues To Thrive. Why That's Important For The Future of MOOCs. Forbes.* `https://www.forbes.com/sites/michaeltnietzel/2021/07/01/georgia-techs-online-ms-in-computer-s` `?sh=433050fea277`

[2]Hayes, G. (2019, December 24). *Where are the Women in Georgia Tech's OMSCS? - Towards Data Science. Medium.* `https://towardsdatascience.com/where-are-the-women-in-georgi`

[3] *The Numbers | OMSCS | Georgia Institute of Technology | Atlanta, GA. (2021).* omscs.Gatech.Edu. `https://omscs.gatech.edu/prospective-students/numbers`

[4] Gavin, C. (2017, December 7). *5 Ways to Survive Grad School. . . With Kids. Huff-Post.* `https://www.huffpost.com/entry/5-ways-to-survive-grad-school-with-kids_` `b_6852158`

[5] Jo, E., Toombs, A. L., Gray, C. M., & Hong, H. (2020). *Understanding Parenting Stress through Co-designed Self-Trackers. Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems. Published.* `https://doi.org/10.1145/` `3313831.3376359`

[6] Raj, S., Toporski, K., Garrity, A., Lee, J. M., & Newman, M. W. (2019). *"My blood sugar is higher on the weekends." Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems. Published.*`https://doi.org/10.1145/3290605.` `3300349`

[7] Rubegni, E., Landoni, M., de Angeli, A., & Jaccheri, L. (2019). *Detecting Gender Stereotypes in Children Digital StoryTelling. Proceedings of the 18th ACM International Conference on Interaction Design and Children. Published.* `https://doi.org/` `10.1145/3311927.3323156`

[8] Dylan, T., Wood, G., Durrant, A. C., Vines, J., Torres, P. E., Ulrich, P. I. N., Cukurova, M., Carr, A., ÇErçi, S., & Lawson, S. (2020). *Designing IoT Resources to Support Outdoor Play for Children. Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems. Published.* `https://doi.org/10.1145/` `3313831.3376302`

[9] Bradley, S. (2020, February 11). *How Long Can Postpartum Depression Last — and Can You Shorten It? Healthline.* `https://www.healthline.com/health/`

depression/how-long-does-postpartum-depression-last#research-about-duration

[10] *Breastfeeding Support for Indian Mothers. (n.d.). Home [Facebook page]. Facebook.*
Retrieved July 18, 2021, from https://www.facebook.com/breastfeedingsupportforindianmothers/

6 APPENDIX

Link to Research papers

6.1 Question 3

Paper 1: Understanding Parenting Stress through Co-designed Self-Trackers (Jo et al., 2020)

Paper 2: "My blood sugar is higher on the weekends": Finding a Role for Context and Context-Awareness in the Design of Health Self-Management Technology (Raj et al., 2019)

6.2 Question 4

Paper 1: Detecting Gender Stereotypes in Children Digital StoryTelling (Rubegni et al., 2019)

Paper 2: Designing IoT Resources to support outdoor play for children (Dylan et al., 2020)