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Thought Spot: Co-Creating Mental Health Solutions with Post-Secondary Students

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Abstract. It is difficult for the nearly 20% of Canadian 15- to 24-year olds reporting symptoms to seek the help they need within the current mental health system. Web-based and mobile health interventions are promising tools for reaching this group; having the capacity to reduce access-to-service barriers and engage youth in promoting their mental well-being. A three-phased, iterative, co-creation developmental approach was used to develop Thought Spot, a platform to better enable post-secondary students to seek mental health support. Co-creation activities included student development teams, hosting a hackathon, conducting focus groups and evidence-based workshops and student advisory groups. Evaluation results highlighted the need for greater role clarity and strategies for sustainable engagement in the co-creation process. Lessons learned are informing the project optimization phase and will be utilized to inform the design and implementation of an RCT, assessing impact on help seeking behaviour.

Keywords. Student mental health, co-creation, crowdsourcing

1. Background

1.1 Mental Health and Transition-aged Youth

It has been reported that 20% of 15- to 24 year-olds experience symptoms of mental illness and 8% have substance use concerns [1]. While early detection and interventions can effectively address approximately 70% of youth mental health issues, only about 36% receive the mental health support they need which can lead to long-term illnesses, as well as other negative outcomes like unemployment, youth justice involvement, or self-medication [2,3]. The current mental health system is difficult for many transition-aged youth to seek help due to barriers both accessing and navigating the system, as well as stigma and concerns about confidentiality [4].

Since over 90% of youth use the Internet regularly [5], online and mobile health interventions are promising platforms for enhancing help-seeking behaviours with their

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built-in features of privacy, geo-location and access to multiple types of data. These interventions can enhance transition-age youths' "capacity to correctly recognize, identify and receive help for psychological disorders in a manner that is both accessible and non-threatening," [6] reduce access-to-service barriers and confidentiality concerns, and actively engage youth in promoting their mental well-being. Participatory approaches like co-design can also strengthen youth buy-in, increase the efficacy, usability and sustainability of the intervention, generate innovative and creative design concepts, and foster youth empowerment, skill and capacity building [7].

2. Co-creation and student engagement

This project employs a co-creation, co-design, phased, iterative approach to develop Thought Spot, a crowd-sourced platform to better enable students to seek mental health service. The project has involved a dynamic consortium of organizations.² The cocreation methods included recruiting a production team responsible for the content, organization and look-and-feel of the platform, a student-led development team that oversaw the work of the production team, along with workshops and a hackathon. There are three project phases: 1) initial development and evaluation of the web-based and mobile platform; 2) optimization and platform enhancement; and, 3) assessment through a randomized control trial (RCT). This paper will describe the development and evaluation of the co-creation aspects of the first two phases of this project.

2.1 Student driven development teams

With direction from the project team, students led the development of the first iteration of Thought Spot (1.0) (mythoughtspot.ca) as an online and mobile platform that aimed to enable students to: 1) geo-locate mental health and wellness services ("spots") in the Greater Toronto Area; 2) mobilize other students to share their knowledge about services; 3) build peer networks; 4) read reviews and comments from peers about services; 5) add their own "spots".

The project team worked with 65 post-secondary students who were responsible for working on all aspects of the project, such as the name of the project, project management and product design. The student development team had meetings where they built consensus and then voted on key decisions such as the student-designed logo. The students worked independently from the project and steering committee, but sought guidance on the nature and scope of their decision-making.

2.1.2 Crowd-Sourcing/Data Workshops (July–August, 2014)

In order to initiate the crowd-sourcing aspect of the project, the students developed and implemented a series of workshops and activities. Crowdsourcing is a process whereby there is an open call to a large group of people, often an online community, to

² The initial consortium included: University of Toronto, Centre for Addiction and Mental Health (CAMH), Ryerson University, the OCAD University, Kids Help Phone, Mind Your Mind, and Connex Ontario; George Brown College and QoC Health joined us in phase 2. The project has been generously funded by the Ontario Ministry of Training Colleges and Universities, the CIHR eHIPP Program and the CAMH Slaight Centre for Transition-Age Youth.

contribute content to a project initiated by an individual, institution, or company. Crowdsourcing co-design activities took place to increase awareness of the Thought Spot product among students, to have students add more "spots" to the map, to verify the data already on the map, and get more students engaged in the overall project. The activity was designed by students on the production team and promoted on university campuses to student groups, including residence dons.

2.1.3 Hackathon (November 2014)

Another step of the co-design process was to engage youth in creating a mobile version of Thought Spot. The project hosted "Hackathought," an open digital "hackathon" event in Toronto that brought together 65 students, new graduates, and young professionals who were divided into 14 teams, and who proposed innovative mobile solutions and enhancements to the platform. The students were given information about mental health, and had access to youth advisors with lived experience, along with technology and mental health experts. Over 2.5 days, teams developed mobile solutions. Judged by a panel of experts and peers, the winning solution, Check It!, led the way to developing a native mobile app (iOS and Android), as well as a "responsive" design of the Thought Spot website, which allows for optimal viewing across a range of devices (e.g., desktop computers, tablets and mobile devices).

2.1.4 KT and engagement workshops with Mindyourmind

Working with **mind**your**mind**, a youth mental health and engagement organization, the Thought Spot team hosted two co-creation events to develop knowledge translation and engagement strategies. These workshops were designed to develop youth-driven approaches to engaging students in the uptake and use of Thought Spot. In March, 2015, 18 youth co-created a promotional strategy for MyThoughtSpot.ca, work that led to the creation of print and online advertising and a promotional video. In March, 2016, 16 participants came together for a one-day workshop focused around the questions: 1) what parts of Thought Spot add value?; and, 2) how can it best be moderated to enhance crowd-sourcing features? This session allowed participants to explore the app and identify its issues and strengths, as well as participate in small group discussions on ease of use, moderation, crowdsourcing, onboarding, categories, inclusion of wellness resources, cultural considerations and privacy. Students verified the importance of complete, accurate data entries, the need for clear, rigorous moderation of the site and the need to create a platform that is reflective of the diversity of its audience.

2.1.5 Phase 1: Key Evaluation Findings

The student engagement process was evaluated by collecting qualitative and quantitative data from project participants. The evaluation found that students engaged with each other and their campuses, worked collaboratively with partner organizations across multiple sectors, and gained new knowledge and skills related to mental health and available resources. In terms of project engagement, all respondents reported participating in activities at the start of the planning process including voting on the project name and logo; however, as the project progressed, there was less involvement by the participants with only one participant reporting volunteering in the workshop facilitation, highlighting the challenge of keeping this target group engaged over time. The evaluation also looked to understand how the project fostered student engagement. Results showed that when responding to "I felt a sense of ownership over this project", 70% (n=10) of student provided a neutral response, although the students with clearly defined roles felt the strongest ownership over the project. Similarly, 60% (n=10) of students felt that they had access to the information required to autonomously make decisions. Comments identified the challenges of having a large development team with suggestions of dividing the development team into smaller working groups, assigning specific roles and responsibilities to the members. These evaluation findings were useful for informing the engagement strategies and approaches in the next phase of this project to optimize Thought Spot and research its effectiveness as an intervention on health seeking behaviors.

2.2. Phase 2: Thought Spot Optimization

Utilizing the learnings from the previous design phase, the Thought Spot project entered an optimization phase. The goals of the second phase are to: 1) optimize the platform to more effectively meet the needs of end-users; 2) explore students' motivations and identify personal, behavioural and environmental influences that will affect their uptake of the platform; and, 3) assess Thought Spot's feasibility, usability and acceptance by the target population. Drawing on the learnings from the first phase evaluation, new strategies and approaches were used to more clearly define roles and responsibilities, clarify expectations and time commitments and increase participation opportunities for all students in a wide range of project activities.

2.2.1 EHIPP Workshops (May–August 2016)

Consistent with co-design approaches and lessons learned, seven student-led workshops, attended by 59 students, were delivered to obtain student feedback regarding the app's usability, its potential value in a post-secondary setting, effective recruitment strategies for the evaluation and approaches to including health information in the app. The workshops also encouraged to brainstorm new functions for the app. The workshops were co-designed and co-facilitated by students to increase ownership and oversight by youth over the research process. A range of creative activities were delivered to provide opportunities for youth to share their views and experiences, including semi-structured focus groups, questionnaires, personas, journey mapping, user-shadowing, and a world café [7]. Honoraria were provided for student participation. Workshop findings were summarized and preliminary results were presented by the students to the student research advisory group, technology partners, and the research team for feedback at each level.

3. Next Steps and Lessons Learned

Based on the learnings from the initial evaluation, smaller student working groups for the next phase of development will be established with clear roles and responsibilities and will work directly with the larger student advisory group. A design working group comprised of student advisory group representatives, members of the research team and representatives from the technology partner has now been formed to analyze findings from the co-design activities focused on platform optimization. This group was constituted to bring all key stakeholder groups together and encourage crossstakeholder collaboration. The working group will meet to develop strategic product recommendations, review the drafts of the product wireframes and review development phase planning completed by the technology partner. Student representatives on the design committee will liaise with the student advisory group to seek input on design elements as they emerge and will assist in planning additional workshops to test the usability of prototypes and wireframes. The technological product development phase will be followed by a co-design process with students to enhance the design and administration of the RCT. Thought Spot will go through rigorous testing of its effectiveness to enhance help-seeking behaviours amongst post-secondary students. The findings from the RCT will significantly contribute to the limited research on appropriate "theories of engagement and implementation" of mental health mobile applications [8].

This project has demonstrated the benefits and challenges of co-creation in the development of a crowd-sourcing platform for students seeking support for their mental health. The project illustrated the possibility of and the approach for including students at every phase of the project and in every aspect of development. At the same time, it underscored the need for sustainable engagement strategies throughout the project activities. It also demonstrated the importance of identifying clear roles and accountabilities for all stakeholders. Project development has been optimal when there is clear communication and co-operation between all major stakeholder groups: students, development teams and researchers. Although the project timeline has spanned several years, the level of engagement and participation from stakeholder some challenges in maintaining individual engagement. Most importantly, stakeholders have had the opportunity to learn more about mental health and to become advocates for improving the mental health of post-secondary students.

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