A TWO-EYED SEEING APPROACH TO EVALUATING AN eINTERVENTION FOR INUIT YOUTH USING INUIT QAUJIMAJATUQANGIT

MEGIS OSKALNS

A THESIS SUBMITTED TO

THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTER OF ARTS

GRADUATE PROGRAM IN PSYCHOLOGY

YORK UNIVERSITY

TORONTO, ON

November 3, 2023

Abstract

Inuit youth have one of the highest suicide rates in the world. Presently, there is no culturally appropriate suicide intervention for this population. This study aimed to evaluate the *process* of developing the I-SPARX CBT e-Intervention, and its *content*, using Two-Eyed Seeing. Four data sets from the 2018-2019 I-SPARX project were used in this study from four communities across Nunavut: Iqaluit (n=22), Qamani'tuaq (n=3), and Kinngait (n=4). One focus group was held in Tkaronto (n=5) with youth from Iqaluktuuttiaq. Thematic Analysis explored responses to research questions as grounded in the two frameworks —three Inuit Qaujimajatuqangit (IQ) principles and western CBT skills. Results demonstrated that features of the *process* of collaboratively developing I-SPARX met principles set out in the IQ framework. Aspects of the *process* of adapting fit with IQ, with *Piliriqatigiingniq* (Collaborative Relationships) being the most prominent IQ. Features of CBT underlying the I-SPARX game met principles set out in the IQ framework: the most prominent principles reflected in the *content* were *Pilimmaksarniq* (Skills and Knowledge Acquisition) and *Qanuqtuurunnarniq* (Problem Solving). Both the *process* and *content* of the I-SPARX project met criteria for a Two-Eyed Seeing evaluation, meshing IQ principles with western CBT applications. Limitations of this study, that engaged a small sample of Inuit youth, are discussed. Recommendations for future research, include incorporating additional IQ principles to expand on Inuit cultural perspectives. Preliminary results suggest that I-SPARX could be efficacious for contributing to Inuit cultural research in development and evaluation of mental health and wellness e-interventions for Inuit youth.

Author Note

Megis is an Indigenous status First Nations individual with a diverse heritage encompassing Ojibway, French, and Eastern European roots. The name "Megis" holds a profound connection to the Ojibway creation narrative, entwined with the healing practices of the Midewiwin tradition. Moreover, it bears symbolic significance within the context of the Seventh Fire Prophecies. Family history and intergenerational trauma are strong personal motivators for her to gain a meaningful understanding of family history and exploring healing for the present and future generations. In this mission, she seeks to amplify the voices of residential school survivors and all Indigenous individuals who have borne the weight of historical traumas. Being a descendant from the hereditary chief line, she feels a strong obligation towards her community and their wellness. Despite not having Inuit ancestry, her research carries the intention of offering valuable insights to guide the psychological community's approach. This is a step towards truth and reconciliation and supporting the mental health of Indigenous People in Canada.

Acknowledgements

I extend my heartfelt gratitude to the multitude of individuals who played a pivotal role in the creation of this thesis. Foremost, I am profoundly indebted to Dr. Yvonne Bohr, whose insights into thematic analysis and valuable editing notes. Sincere appreciation goes to Alaina and Dr. Jeffrey Hankey for assisting with hours of coding quotes and providing invaluable editorial assistance. I am also deeply thankful for the guidance and encouragement offered by Dr. Debra Pepler throughout the development of this paper. Furthermore, I wish to extend my thanks to the Inuit communities whose active participation in this research made it possible to undertake this study. Your collaboration is invaluable, and this study could not be done without you. All your help is remembered and appreciated.

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Introduction

In Canada, the territory of Nunavut records an alarmingly high suicide rate at 78.1 per 100,000. This rate is substantially higher than the national average of 13.1 per 100,000 (Centre for Suicide Prevention, 2020). Youth age groups most at risk are those 18-27 years old, closely followed by those 13-17 years old (Anang et al., 2021). This exceedingly high risk is likely related to the cumulative effects of a number of factors such as: historical and contemporary abuses and injustices, involuntary placements in residential schools, the ensuing intergenerational trauma and breakdown of cultural identity, as well as geographic isolation and poverty. For Inuit youth such factors and their combination can result in depression, substance abuse, suicidal ideation, and risky behaviour that occur at higher rates than in non-Inuit youth (Fraser et al., 2015). In the past, many intervention studies in Inuit and other Indigenous communities have been characterized by a lack of cultural sensitivity, lack of input from community members, and were often based on research approaches using colonial views (Anang, 2021; Ansloos, 2018). Thus, it is imperative that culturally appropriate intervention research be conducted, and that accessible mental health resources be provided to youth in Inuit communities (Bohr et al., 2016). In the case of Inuit in Nunavut, traumatic historical events in the Canadian Arctic have separated children from their families, eliminated nomadic lifestyles through politically strategic relocations, and disrupted traditional roles and frameworks for families (Canadian Geographic, 2018; Modlin et al., 2020; Tester & Tagalik, 2017). A lack of cultural awareness, and of the historical foundations of current vulnerabilities may be hindering the progress of research that aims to support mental wellness.

Bridging the gaps in Inuit youth suicide research means moving away from traditional western styles of research, urging Inuit communities to share their perspectives, and integrating Inuit cultural views into all aspects of research. The current research aimed to address some of the above concerns by focusing on a culture-specific intervention that was designed in collaboration with Inuit youth

themselves. It is a sub-study of a larger research initiative titled Inuit-Smart, Positive, Active, Realistic X-factor thoughts (I-SPARX). I-SPARX is a computer-based videogame that teaches Cognitive Behavioural Therapy (CBT) skills to for Inuit youth ages 12-24. The original Maõri version of the game, entitled SPARX, was designed by researchers in New Zealand to address high suicide rates in Maori youth and shown to be effective in reducing depression (Merry et al., 2010; Shepherd, 2011; Tatz, 2014). SPARX was culturally adapted by Inuit youth together with a York university-based research team in five communities in Nunavut, resulting in Inuit SPARX – or I-SPARX. The youth engagement initiative that led to the development of I-SPARX is the subject of the study detailed here.

The current study is novel in two ways: 1) it examined an Inuit-specific intervention, designed in collaboration with Inuit community members and 2) it used an Inuit-specific theoretical model to understand data generated by youth and Elders who participated in the larger program described above. The study will thus be contributing an Indigenous cultural perspective to research that is designed to support the mental health and wellness of Inuit youth. Interpretation of the data using an Indigenous and specifically Inuit perspective will support knowledge mobilization for Inuit communities and the field of psychology at large. The research was designed to highlight culturally important factors that may have been overlooked in previous research on preventive mental health interventions for Inuit youth, and to provide a unique perspective on resilience of Inuit youth. Additionally, the specific focus on Inuit culture and historical contexts may provide a more thorough understanding of some of the potential factors involved in the development and prevention of mental health challenges, including those leading to youth suicidality in Nunavut.

Background

Historical Context

Colonization is defined as an act of establishing a colony in a setting different from one's place of origin (IXL Learning, 2021). The practice of colonization has been used historically throughout world history to increase powers of a state or country (Ferro, 1994; Machiavelli & Bondanella, 2005). Colonization has many negative effects on the Indigenous people who are colonized, in particular on their mental health and well-being (Lavelee & Poole, 2010). To better understand and study Inuit culture, and the context of modern-day challenges with youth mental health in Inuit communities, it is important to discuss significant events, community structure and historical changes using three time frames: pre-colonization, post-colonization and present.

Pre-Colonization

In pre-colonial times, Inuit people lived a nomadic lifestyle with their families and community in the extreme Arctic. Practices, history, and traditions, such as the Inuit Qaujimajatuqangit (IQ) principles, were taught orally and through observational learning (Canadian Geographic, 2018; Tester & Tagalik, 2017). IQ is a set of traditional values, practices, and ways of being that are timeless to Inuit life (Tester & Tagalik, 2017). Daily life was about survival through working together, teaching children, and working with the land. From an early age, children were taught about hunting, fishing, surviving the cold, and the IQ principles, in order to live a good life and get along with others. In the traditional Inuit parenting model, Inuk children are at the center of the family life (Tester & Irniq, 2008). There are four key facets of traditional Inuit childrearing: parents and extended family, Inuit culture and tradition, Elders and leadership, and the environment (Tester & Tagalik, 2017).

Post-Colonial

The first contact the Inuit had with European traders occurred in the 1500s to 1600s. Permanent settlements started appearing in Inuit territory soon after. The first was in 1771, when the Moravian

church set up their first mission station on the coast of Labrador. In the 1850s permanent stations for whalers began to appear in the Arctic. In the mid to late 1800s, trading posts, military bases and research posts became permanent new features in the Arctic regions (Canadian Geographic, 2018).

The continued growth of colonization brought the lasting presence of colonizers and introduced historical traumas. From the 1950s to 1960s, the Canadian government forced the Inuit into settlements and permanent, overcrowded 240 square foot wood frame houses that housed eight or more people. These wood houses had no heat, running water, flooring, or access to sanitation facilities. This ended the nomadic lifestyle, hunting was forbidden (Canadian Geographic, 2018; Damas, 2002; Dawson, 2008), and communities were overwhelmed by new diseases such as tuberculosis, flu, colds, dysentery, smallpox, syphilis, chicken pox, diphtheria, measles, whooping cough, and more. Most viral infections came from contact with non-Inuit travelers. High infant mortality and rapid decline in the Inuit population ensued (Damas, 2002; Piper & Sandlos, 2007). To seek any kind of medical help for tuberculosis, travel to a distant sanitarium was required (Moller, 2010; Tester & Tagalik, 2017). In the 1940s to early 1950s, tuberculosis was treated with a surgical procedure to collapse the lung. Patients were confined to their bed for extended periods of time. Youth receiving treatment had their lower limbs in plaster casts to keep them immobile (Grygier, 1997). Mothers were separated from their children and were not notified about what was happening to the latter. Babies born in sanitaria were adopted out. Inuit children were frequently returned to the wrong settlements or were too young to know their family members and relatives and to which settlement they belonged. Many families did not know the fate of their kin and there are many unmarked graves (Grygier, 1997; Moller, 2010; Tester & Tagalik, 2017).

Colonization introduced many difficulties for the Inuit people, including: language barriers, the introduction of a new monetary system that was poorly understood, the shooting of dog sled teams, having their children taken to Indian residential schools, disrupted family roles, and discriminatory

hunting restrictions. Colonization resulted in Inuit losing their traditional teachings and nomadic way of living in seasonal cycles in harmony with nature (Kulchysky & Tester, 2007; Tester & Tagalik, 2017).

Present

There is a growing body of literature for health researchers emphasizing the importance of Inuit knowledge and perspectives. This incentive emboldens the utility of grounding research in Inuit ways of knowing (Healey & Tagak, 2014). Elders in the community have voiced the importance of youth learning IQ principles and traditional Inuit knowledge about the land. The Elders also emphasize that schools are an ideal site for youth to learn Inuit teachings (Tester & Tagalik, 2017). Communities and schools are in the beginning stages of integrating traditional IQ principles into their curricula. For example, in a pilot study by Mearns et al. (2020), IQ principles were taught in various daycare centers. The Nunavut Department of Education had previously adapted their curriculum to include IQ principles since 2007 (Nunavut Department of Education [NDE], 2007). However, in 2019 a new curriculum emerged, based on the curricula of the provinces and territories of Alberta, Saskatchewan, Manitoba, and the Northwest Territories. In this new curriculum, the IQ principles are only included in the resources for the principals and teachers (Nunavut Department of Education [NDE], 2019).

Mental Health Among Inuit Youth

As previously mentioned, Nunavut reports an alarmingly high suicide rate at 78.1 per 100,000 (Centre for Suicide Prevention, 2020). The youth age groups that are most at risk are from ages 18-27 and 13-17 years old (Anang et al., 2021). This social issue needs to be considered a national emergency and addressed at the community and all levels of government (Walls et al., 2014). This is urgent as suicide rates may be on the rise due to the COVID-19 pandemic that has affected Nunavut much like the rest of the country (Ineese-Nash, 2020).

There are several risk factors for depression and suicidality that are particularly pertinent to Inuit youth given their historic and contemporary pre-disposing factors of collective trauma. Cross-

cultural predictors of suicide in adolescents with depression include being exposed to stressful and negative events around puberty (Ge et al., 2001), negative self-perception, insecure attachment styles (Hankin, 2006; Morley & Morgan, 2011), and vulnerable temperament and personality (Compass et al., 2004). Inadequate cognitive emotion regulation such as proneness to rumination, catastrophizing, and having a hopeless view of oneself, the world, and the future are further general predictors of depression (Abela & Hankin, 2008; Beck & Shaw, 1977; Garnefski & Kraaij, 2006). Feelings of hopelessness are another important factor as some community members relate it to many established causes of Inuit suicide (Egeni & Egeni, 2011). In addition, repetitive and/or simultaneous traumas create an extreme risk for depression and suicidal behaviour (Kirmayer et al., 2000).

Interventions That Address Depression and Mental Health: CBT and cCBT

Cognitive Behavioural Therapy (CBT) is an intervention based on the idea that thoughts precede mood. Accordingly, mood can be enhanced and stabilized by changing thought patterns of unproductive beliefs that result in low mood and negative coping. Additionally, CBT teaches positive coping skills and self-regulating behaviour (Beck, 1997). CBT has demonstrated more effectiveness in treating adolescent depression than other conventional forms of therapy (Lewinsohn & Clarke, 1999) and CBT interventions have been shown to be culturally adaptable (Whaley & Davis, 2007). In the last decade this form of therapy has been culturally adapted for Indigenous populations and appears to show promise for future interventions (Bigfoot & Schmidt, 2010; Kowatch et al., 2019). Computer-based CBT (cCBT) programs specifically demonstrate effectiveness for lowering symptoms of depression and anxiety in youth. Additionally, cCBT tools also appear to help address emotional and behavioural difficulties as well as poor global functioning (Abeles et al., 2007). SPARX is a cCBT game that was originally designed for Maori youth in New Zealand to help with mild to moderate depressive symptoms (Cheek et al.,2014). Other versions of SPARX have been developed such as *Rainbow SPARX* for sexualized minority youth (Lucassen et al.,2015), and *SPARX-R* for adolescent in alternative education (Kuosmanen et al., 2017).

Importance of Culture For Indigenous Mental Health

There are several challenges for addressing Indigenous mental health needs in Canada. Current literature calls for including Indigenous cultural practices over common western therapy practices (Brooker, 2018; Heid et al., 2022; Morris & Crooks, 2015). Furthermore, many counsellors are not trained in cultural sensitivity, nor do they possess knowledge about historical oppression such as Residential Schools, and other colonial harms (Brooker, 2018; Heid et al., 2018). Many Indigenous traditions, such as IQ principles, emphasize a collectivistic foundation? Approach, which is different from western individualistic practices (Brooker, 2018; Tester & Tagalik, 2017). Furthermore, Indigenous-specific approaches to health and healing emphasize relational determinants of health between family, friends, spirit, extended family, clans and the natural environment. These relationships need to be in balance as well as fostering feeling of connectedness (Cardinal & Pepler, 2021; Heid et al., 2022; Tester & Tagalik, 2017). Other considerations include gender, traditional roles, and the Indigenous understanding of two-spirited nature (Heid et al.,2022). The latter is recognized by Indigenous traditions and transcends contemporary definitions of western LGBTQ+, with an understanding of both male and female spirits in the individual (Heid et al., 2022; Hunt, 2016). This concept is beyond the scope of this study, but merits acknowledgement for cultural sensitivity for Indigenous mental health. In addition, this is only a sample of important topics for mental health training for cultural sensitivity.

The Current Study

The current study was embedded in a larger four-year youth engagement initiative designed to test a community- and youth-driven Inuit-specific version of a CBT-based videogame intervention. cCBT is advantageous in settings where one-on-one CBT treatment is not available, there are financial restraints, there is a shortage of skilled therapists, and when there are confidentiality concerns (Sethi & Campbell, 2010). In the first phase of the I-SPARX project, consultations were held with youth and Elders in five Nunavut communities, and youth subsequently collaborated with the research team in

developing an Inuit adaptation of the original SPARX game. Phase two, Dissemination and Practice, involved recruiting youth to play the game. Phase three involved Knowledge Mobilization, i.e., bringing the findings and knowledge these generated back to the communities (Bohr et al., 2016).

Theoretical Frameworks that Emphasize Inuit Perspectives and Ways of Knowing

The proposed study uses Two-Eyed seeing and IQ principles as its frameworks. "Two-Eyed Seeing (*Etuaptmumk* in Mi'kmaw) embraces "learning to see from one eye with the strengths of Indigenous knowledges, and ways of knowing, and from the other eye, with the strengths of mainstream knowledges and ways of knowing, and to use both these eyes together, for the benefit of all," as envisioned by Elder Dr. Albert Marshall." (Marshall et al., 2015). This framework provides a pathway towards plural coexistence by pairing Indigenous cultural knowledge with western scientific perspectives for an integrative holistic approach in research. This approach allows multiple perspectives to be considered equally within the same framework. In contrast western practices are considered "one-eyed" as they use one knowledge system and produce a singular understanding that informs decision-making (Reid et al., 2021). For more information pertaining to Two-Eyed Seeing see Appendix A. Two-Eyed Seeing has been used across a variety of fields including education, medicine, adapting a smoking cessation toolkit to align with IQ principles, and wildlife health (Barker et al., 2021; Hall et al., 2015; Hatcher et al., 2009; Kutz & Tomaselli, 2019; Martin, 2012; Mckeon, 2012; Reid et al., 2021). The author wants to indicate that other Indigenous frameworks such as the Ojibway Medicine Wheel, Two Row Wampum, and the Double-Canoe have also been used in research (Reid et al., 2021). The research team acknowledges that there has been recent criticism of the Two-Eyed Seeing model. Hereby, there is concern because of the difficulty of placing equal value on western and Indigenous ways of knowing (Broadhead & Howard, 2021; Forbes et al., 2020; Martin et al., 2017). For this study, youth leaders were consulted, and they endorsed this model as a framework. In this study, Two-Eyed Seeing was utilized in the thematic analysis to evaluate how participants perspectives on the utility of using IQ principles and

western CBT, in the context and developmental *process* of the I-SPARX game. To reiterate, IQ serves as one eye/perspective and western CBT serves as the second eye/perspective in the framework. These two eyes will come together and evaluated together through a thematic analysis which will be discussed below.

Inuit Qaujimajatuqangit [Khow-yee-mah-yah-too-kha-neet] literally translates as "that which has long been known by the Inuit". The root word "qaujima" means "to know". IQ is comprised of eight principles and each principle has a deep meaning associated with it. The goal of the IQ principles is to create capable human beings by teaching social skills, hunting, family roles and responsibilities, and respecting the land. It applied to child rearing as it involves teaching, training and learning (Tester & Tagalik, 2017). The I-SPARX study has aimed to utilize three of the eight IQ principles: *Pilimmaksarniq* [Pee-lee-eem-mack-sar-neek] (Skills acquisition)*, Piliriqatigiingniq* [pee-lee-ree-kha-tee-gee-ing-neek] (Collaborative relationships)*,* and *Qanuqtuurunnarniq* [Kha-new-kht-too-rue-ng-are-neek] (Problem solving). The other five principles include: *Avatimik Kamattiarniq* [ah-va-tee-meek Ka-mat-tee-are-neek] (the concept of environmental stewardship), *Inuuqatigiitsiarniq* [ee-nu-oo-kha-tee-geet-see-are-neek] (the concept of respecting others), *Tunnganarniq* [tune-ng-an-are-neek] (the concept of being open), *Pijitsirarniq* [pee-yit-seer-ar-neek] (the concept of serving), and *Aajiiqatigiingniq* [ah-yee-kha-tee-gee-ning-neek] consensus-decision making). All eight IQ principles definitions can be found in Appendix B.

The CBT skills taught in the original SPARX game and the adapted I-SPARX are: *Hope (you can change your feelings)*, *Relaxation*, *Communication*, *Assertiveness*, *Negotiation*, *Activity scheduling*, *Strong emotions, Anger, Mindfulness*, *Problem solving (STEPS)*, *Identifying and challenging unhelpful thoughts (GNATS -Gloomy, Negative, Automatic Thoughts)* and *Identifying and growing SPARX* (Auckland UniServices, 2014; Merry et al., 2012). See Appendix C for all SPARX level (module) information.

Research Objectives and Questions

The overarching goal of this study was to contribute to cultural representation in the development and evaluation of mental health and wellness interventions designed for Inuit youth. I aimed to accomplish this by evaluating a research initiative designed to align with Two-Eyed Seeing. This initiative focused on a commonly used western intervention (c-CBT), adapted to Inuit culture through a collaboration with Inuit youth, delivered and assessed with a traditional Inuit theoretical framework (IQ) in mind. The Two-Eyed Seeing framework was used to guide this study and was not used to guide the program development. To summarize, IQ serves as one eye/perspective and western CBT serves as the second eye/perspective in the Two-Eyed Seeing framework. These two eyes will come together and evaluated together with a thematic analysis. Specifically, this youth engagement project evaluated a culturally adapted videogame intervention designed to teach Inuit youth CBT skills (I-SPARX), with regard to both *process* (the process of collaboratively adapting an existing intervention and designing a culturally specific outcome measure) and *content* (the concepts taught in a c-CBT intervention).

For the purpose of this study, *process* refers to the activities of the youth leaders and the I-SPARX initiative as a whole and *content* refers to CBT principles and activities that were shared during those activities. Rules for coding *process* and *content* can be found in Appendix D.

My evaluation focused on whether both the *process* and *content* of this project met criteria for Two-Eyed Seeing. In this case, whether it satisfied the requirements set forth in the IQ philosophy while evaluating an intervention that is considered "evidence-based" in western contexts.

To address these objectives, I asked the following questions:

From the perspective of Inuit youth leaders in the I-SPARX project:

1. Did any features of the *process* of collaboratively developing I-SPARX meet the principles set out in the IQ framework?

2. If so, what aspects of the *process* of adapting fit with the IQ principles, and which principles were most prominent?
3. Did any features of the CBT theory and skills underlying the I-SPARX game meet principles set out in the IQ framework?
4. If so, what aspects of the *content* of the intervention that was evaluated in this project fit with the IQ principles, and which principles were most prominent?

Methods

Participants

The current study was part of a larger initiative, the I-SPARX project. Communities were included in the project based on the recommendation of Isaksimagit Inuusirmi Katujjiqatigiit Embrace Life Council staff who were partners in the project. In each community, youth were recruited through community Facebook pages, community facilitators, librarians, flyers at the libraries, schools, youth centers, existing programming at local high schools, and word of mouth when the research team was present in communities.

The I-SPARX study has involved 34 youth participants from four communities across the Territory of Nunavut: Iqaluit, Iqaluktuuttiaq (Cambridge Bay), Qamani'tuaq (Baker Lake), and Kinngait (Cape Dorset). For this study, I used four representative data sets from 2018-2019 for the I-SPARX project. Data set 1, is from a Youth Leaders' focus group that took place in Cape Dorset/Kinngait, Nunavut on August 2, 2018 (n=4). Data set 2, is from the I-SPARX Youth Leaders' Retreat that took place on April 13, 2019 (n=22) Iqaluit, Nunavut. Data set 3, is from a Youth Leaders' focus group that included participants from Cambridge Bay/Iqaluktuuttiaq and was conducted at York University in Toronto, Ontario on July 11, 2019 (n=5). Data set 4, is from a Youth Leaders' focus group that took place at Baker Lake/Qamani'tuaq, Nunavut on June 28, 2018 (n=3). The title of Youth Leader refers to Inuit youth who took initiative to represent the project in their community, and provide feedback for different stages of

the project. Youth leaders were distinct from youth participants who tested the game that had been adapted with input from the youth leaders.

Ethics

Approval for this study was obtained through the Human Participants Review Committee and the Advisory Group for Research Involving Indigenous Peoples at York University. The advisory group is a subcommittee guided by the Tri-Council's Policy statement on *Research involving the First Nations, Inuit, Métis Peoples of Canada*. Additionally, a research license was obtained each year of the project from the Nunavut Research Institute (NRI). Prior to conducting and collecting focus group data, participants read and signed consent forms (see Appendix E for a sample form). Data collected belong to the participating Nunavut communities. Study findings are disseminated through the NRI, received by community representatives, and reviewed/approved by participants before they are shared in any academic contexts or submitted for publication.

Procedure

All focus group sessions were audio recorded and transferred to a password protected USB. The audio files were kept on a password protected USB drive, which was secured in a locked cabinet. Audio recordings were transcribed verbatim by the research assistants and stored on a password protected word document. In preparation, the author read literature on Two-Eyed Seeing and IQ to better acquaint herself with this knowledge. For a summary of the procedure see Figure 1.

Data Set 1. Youth recruitment was facilitated through the I-SPARX project community facilitator in Cape Dorset/Kinngait. This focus group was held in Cape Dorset, Nunavut on August 2, 2018. During this retreat, youth leaders, facilitators and members of the York University team engaged in: 1) reviewing the visual adaptation of SPARX to I-SPARX; 2) sharing circles/focus groups designed to contribute to the planning of the next 2 years of the project and the design of an outcome measure for

the I-SPARX effectiveness trial; 3) educational workshops on mental health literacy and research skills. Approximately eight hours and 26 minutes of audiotaped discussion were recorded.

Data Set 2. Youth recruitment was facilitated through community facilitators and the I-SPARX Facebook page for the *Youth Leader Summit* held in Iqaluit, Nunavut in April 2019. During this retreat, youth leaders, facilitators and members of the York University team engaged in: 1) reviewing the visual adaptation of SPARX to I-SPARX; 2) sharing circles/focus groups designed to contribute to the planning of the next 2 years of the project and the design of an outcome measure for the I-SPARX effectiveness trial; 3) educational workshops on mental health literacy and research skills. Approximately one hour and 17 minutes of audiotaped discussion was recorded.

Data Set 3. Youth recruitment was facilitated through the I-SPARX project community facilitator in Cambridge Bay/Iqaluktuuttiaq. This focus group was held on July 11, 2019 in Toronto, Ontario at York University with youth from Cambridge Bay/Iqaluktuuttiaq (n=5) who were visiting Toronto for reasons unrelated to the project. This focus group was held in the context of collecting feedback to develop a culturally sensitive and specific outcome measure for the I-SPARX game. In addition, youth discussed community and youth mental health, the role of traditional culture, and the potential usefulness of technology in providing mental health support (see Appendix F). Approximately two hours and 44 minutes of audiotaped discussion were recorded.

Data set 4. Youth recruitment was facilitated through the I-SPARX project community facilitator in Baker Lake/Qamani'tuaq. This focus group was held in Baker Lake, Nunavut on June 28, 2018. During this retreat, youth leaders, facilitators and members of the York University team engaged in: 1) reviewing the visual adaptation of SPARX to I-SPARX; 2) sharing circles/focus groups designed to contribute to the planning of the next two years of the project and the design of an outcome measure for the I-SPARX effectiveness trial; 3) educational workshops on mental health literacy and research skills. Approximately six hours and 38 minutes of audiotaped discussion were recorded.

Data Analysis

The method selected for the data analysis in this project was *Theoretical Thematic Analysis* (TTA; Braun & Clarke, 2006). This method was chosen to explore the research questions as grounded in the two frameworks that guided this study—three IQ principles and western CBT skills—and is suited to participant responses within those frameworks. The TTA method is outlined by Braun and Clarke (2006) (see Appendix G). In this project we used a deductive approach, or framework thematic analysis, which involved coming to the data with some preconceived themes based on the frameworks listed above. TTA involves reading through data sets, such as interview transcripts, and identifying patterns in meaning across the data. This type of analysis is advantageous for this type of research because it allows for the generation of new concepts and insights from data, novel ideas that can inform and even reshape the established principles and frameworks they are structured on. The main steps of TTA are: 1) Familiarization with data, 2) Generating initial codes, 3) Searching for themes, 4) Reviewing themes, 5) Defining and naming themes, and 6) Producing a report (Braun & Clarke, 2006; Haslma & Mcgarty, 2019). TTA is appropriate for culturally specific interviews as it allows researchers to transcend limitations of their own cultural knowledge (Gadberry, 2014). This method makes thematic coding more adaptive when it comes to doing cultural research with Indigenous communities. In addition, thematic analysis allows the coding of novel umbrella ideas that lead to a better understanding of emerging topic (Braun & Clarke, 2006).

Focus group audio recordings were transcribed by the author and other members of the research team. Accordingly, the lead researcher familiarized herself with the data by reading and rereading the transcripts and noting initial thoughts. Both *content* -related and *process* -related data were examined. *Process* refers to the activities of the youth leaders and the I-SPARX initiative as a whole (i.e., psychoeducational skills), and *content* refers to CBT principles and activities. The data were transferred into *Google Sheets* for coding the transcript based on *content* or *process,* and the three IQ

principles. Coding was completed by the author over several months. Once this initial coding was complete, a meeting with team members was held to discuss, revise, and consolidate codes where needed. Several facilitator questions were included in the quotes as youth were shy and less responsive at the start of the focus group. Facilitator quotes were only used when youth expressed simple agreement to questions, and when facilitators summarized youth responses to a question. Themes with less than four codes were discarded or amalgamated within appropriate subthemes. All data were double-coded. This was to ensure inter-rater reliability for *content* and *process* codes. First- and second-order subthemes were generated after members of the research team were in agreement regarding global themes.

Two-Eyed Seeing

As previously mentioned, Two-Eyed Seeing uses multiple perspectives for an integrative holistic approach to research. This allows multiple perspectives to be considered equally within the same guiding structure. There is no standard for using Two-Eyed Seeing in studies. However, the basic principle is to evaluate using two perspectives (eyes). The evaluation tends to generally discuss how the two perspectives come together, rather than an in-depth discussion. In a comparable study by Barker et al. (2021), the researchers used Two-Eyed Seeing to collaboratively develop an adapted smoking cessation toolkit for Inuit people. They used western CBT activities for one perspective, and IQ for the second perspective. The CBT framework activities were adapted based on IQ values during the focus groups. This was followed by a short general discussion that alluded to how IQ was used in the adaptation of the toolkit. For the current study, IQ served as one eye/perspective, and western CBT served as the second eye/perspective in the Two-Eyed Seeing framework. Themes and subthemes from these two perspectives were generated through the TTA process. Afterwards, the themes produced combined the two perspectives holistically to evaluate the cultural representation in the development and evaluation of mental health, and wellness e-interventions designed for Inuit youth.

Figure 1

Summary of the Steps Involved in the Procedure

1.Hold focus group sessions with Inuit youth that are recorded

2.Transcribe focus group audio recording and transfer into Google Sheets

3.Code focus group data for content and process with the research team

4.Use Theoretical Thematic Analysis to analyze to generate themes

5.Evaluation of the themes using Two-Eyed Seeing

Transcripts

During the research *process* two transcripts were dropped: The Elders session in Cambridge Bay and one session during the Iqaluit I-SPARX retreat. The Elders session was not used in order to focus on the voices of the youth for this study. One out of the four transcripts from the Iqaluit retreat was dropped as circumstances invalidated participant responses and the transcript was not usable for this study. Transcripts for the Baker Lake and Cape Dorset sessions were made available for use later in the study, and parts of the psychoeducation workshops were abridged due to length of the transcript sessions.

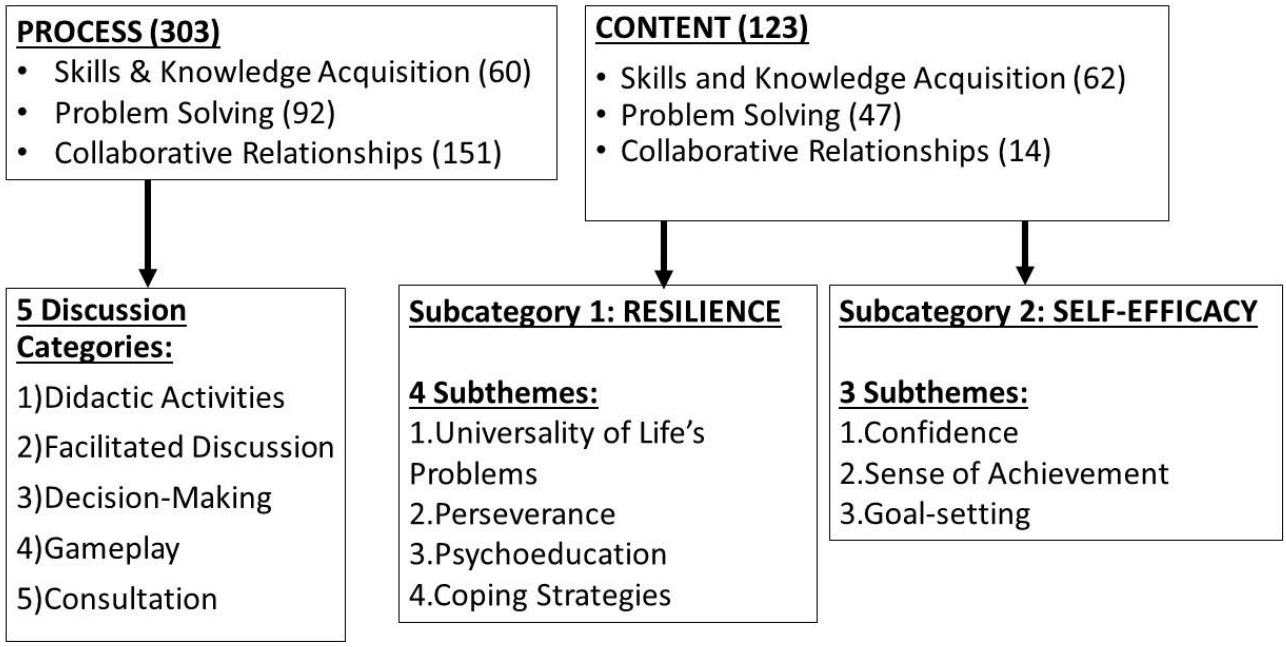
Results

The study results are organized with the two data categories: *process* and *content* as conceived through an IQ lens. *Process* refers to the *activities* of the youth leaders and community members, facilitated by members of the research team, while involved with the I-SPARX initiative as a whole, such as discussions, decision-making sessions, didactic workshops, and culture-based activities. *Content* refers to specific CBT-based principles, goals, strategies, and skills that were conveyed 1) within the I-

SPARX game itself, and 2) by facilitators in the context of many project activities. The thematic tree in Figure 2 illustrates the major themes, subthemes and subcategories for the *process* and *content* codes.

Figure 2

Thematic Tree for Process and Content Themes



Process as conceived through an IQ lens

Process data mapped onto the major IQ themes of *Pilimmaksarniq* (Skills and Knowledge Acquisition), *Piliriqatigiingniq* (Collaborative Relationships), and *Qanuqtuurunnarniq* (Problem Solving). These IQ principles foster capable human beings by teaching social skills, hunting, and family roles and responsibilities. Altogether, 303 *process* codes were recorded. *Process* data generally fell under five subtheme categories, including *didactic activities*, *facilitated discussions*, *decision-making*, *consultation*, and youth leaders' *gameplay*. *Didactic activities* and *facilitated discussions* included topics such as IQ, CBT, mental health, stigma, ethics, research methods, and help-seeking. While *didactic activities* involved one-directional teaching and knowledge transfer, *facilitated discussions* were open and

dialogical. *Decision-making* sessions involved reaching consensus on items such as the adaptation of the game, design, outcome measure, and knowledge mobilization activities. *Consultation* involved input from youth on the game adaptation, such as culture-specific style and other gameplay elements. Finally, youth leaders' *gameplay* described their immersion in the teachings of the game during its adaptation.

In the following section I provide exemplary quotations spanning the five subtheme categories for each of the three IQ categories.

***IQ – Pilimmaksarniq* (Skills and Knowledge Acquisition)**

During *facilitated discussions* youth shared their acquired knowledge from the retreat psychoeducation workshops: "We learned that people with mental disabilities are not crazy or scary" (Youth, Meeting B). Youth also recalled items learned during I-SPARX *gameplay,* such as GNATs (Gloomy Negative Automatic Thoughts) and how they apply to real life: "And sometimes there is good reason to have them [GNATS] and then you kind of have to cope with that. And other times it's just something that we keep doing that's not very productive" (Youth, Meeting C). There were many opportunities throughout the I-SPARX project to discuss ways in which the game might be made more accessible or relatable to Inuit youth. Here, for example, culturally specific examples relating to breathing were reviewed during a *consultation* session:

> So one of the things you guys talked about when we talked about deep breathing was how for all three of you, when you've talked to a coach or a teacher when you're stressed or something, and you all found that it has been useful, do you think there's any way we could use it in the game so that people use the deep breathing and relate to the deep breathing? (Facilitator, Meeting D)

***IQ – Piliriqatigiingniq* (Collaborative Relationships)**

Youth were given the opportunity to work together during various retreat activities. In the following quote from a *facilitated discussion*, a youth reflected on what they learned after an igloo

building activity: “I learned that when we all work together that things get done faster” (Youth, Meeting B). Youth also collaborated during *consultations* on desired cultural changes in the game. One youth suggested traditional Inuit clothing for characters such as clothing many from caribou hide (Youth, Meeting A). Youth discussed positive experiences collaborating with the I-SPARX team as expressed in the following quote: “I like going here, ‘cause I like playing the game and talking about what we’re going to do, I’m having fun planning or something” (Youth, Meeting A). In some *didactic activities*, facilitators highlighted personal coping skills youth had used and the potential to broaden the use of these skills in their communities. Youth indicated activities such as going to the gym, playing sports, listening to music and going for walks, were activities people in their community could do to feel better when feeling down (Facilitator, Meeting A).

***IQ* – *Qanuqtuurunnarniq* (Problem Solving)**

During *decision-making* sessions, there were opportunities for collectively solving the problem of identifying and implementing culturally appropriate game adaptations. One youth shared that the SPARX game caught their interest because it would be adapted to Inuit culture, which prompted them to participate in the study: “My hope…I want[ed] to help to give feedback about how we can make this more Inuit relevant” (Youth, Meeting B). An adaptation some youth wanted to see in the game was the use of bones in the plot and island landscapes to reflect the arctic geography. One suggestion was to have a first level quest where bones needed to be returned to the central island because they were erroneously moved and scattered. “[We would have to bring them [the bones] back for the hunting to be good again” (Youth, Meeting A). Bones are an important component in Inuit hunting practices.

During youth leader’s *gameplay,* youth suggested changes to the main meeting place and being able to place the collected gems in this game area:

> When we go to the levels, to get the gems…it would be better if…the circle was a gazebo….you go to that place and you put them [the gems] in place. (Youth, Meeting A).

Developing a post-game outcome measure was an essential goal and challenge tackled during the *process* of I-SPARX. At the time, there were no culture-appropriate outcome measures available for use in the current project to adequately assess the impact of game play on Inuit youth. Accordingly, youth leaders were central to the task of helping design an Inuit-specific measure through engaging in *facilitated discussions* and *consultations*. The following quote in one *facilitated discussion,* highlights anger as a sign of depression and how youth could recognize it:

> I guess one thing…youth in the pilot study told us they experienced depression more as kind of anger, and being irritable, and kind of not being able to tolerate people. Is that something that you're familiar with and would you agree that that might be a sign of depression, or does that not apply to you guys? (Facilitator, Meeting C)

During another *consultation* session youth were asked to consider how the I-SPARX gameplay could contribute to mitigating mental health challenges like depression:

> So if we want to get a little bit more specific. What kind of things do you think we might feel or think more or less, before after playing the game? What kinds of thoughts and emotions do you think the game might change or influence? (Facilitator, Meeting C)

Content as conceived through an IQ lens

Content items are related to CBT-based principles, goals, strategies, and skills that were taught 1) in the game and 2) in the context of project activities. *Content*, by definition, was generally linked to *Pilimmaksarniq* (Skills and Knowledge Acquisition). CBT skills taught in the seven levels of the game are: *Relaxation, Hope (you can change your feelings), Identifying and challenging unhelpful thoughts (GNATS), Activity scheduling, Problem solving (STEPS), Communication, Assertiveness, negotiation Strong emotions, anger, mindfulness;* and *Identifying and growing SPARX*. See Appendix C for all SPARX level (module) information. *Content* data were coded around the major IQ themes of *Pilimmaksarniq* (Skills and Knowledge Acquisition), *Piliriqatigiingniq* (Collaborative Relationships), and *Qanuqtuurunnarniq*

(Problem Solving). Seven subthemes emerged: *universality of life's problems, perseverance, psychoeducation, coping strategies, confidence*, *sense of achievement* and *goal-setting*. These subthemes were categorized into two categories: *Resilience* and *Self-efficacy*. Altogether, 123 *content* codes were recorded. In the following section, I provide exemplary quotations for each of the three IQ categories, followed by examples of the seven subthemes under the *Resilience* and *Self-efficacy* categories.

***IQ – Pilimmaksarniq* (Skills and Knowledge Acquisition)**

Skill sharing was a prominent way in which youth demonstrated learning new abilities. Youth shared how the coping strategy of breath work could translate to the teaching of hunting skills: "When the boys are trying to learn how to hunt and they don't get it right the first time, the older boys could teach them to deep breathe" (Youth, Meeting D). Furthermore, youth discussed sharing skills such as cognitive change to help a friend deal with being bullied: "It would help people here, especially because one of my friends, after she gets picked on for no reason, she's scared to go out…changing her thoughts and actions, I think it would help her" (Youth, Meeting D). Another instance of sharing skills was when a youth helped her friend when she suggested playing I-SPARX as a way to get her through a tough time:

> Yeah when I first played the game, I wasn't dealing with too much. Not going to lie, there was some things but not a whole lot. And then after playing the game, I was like, "Oh cool. That's fun." And then later on, I think one of my friends, she was having a tough time. And I was like "Hey, do this." Then, yeah, I helped her and the game helped her and it was fun. It just felt really good to be able to help someone (Youth, Meeting C).

Participants also exemplified several instances of teamwork when they worked with and helped others. One such instance was in realizing that depression is universal and how they recognize this negative state in others:

> Yeah…sometimes, too, in…the comments people can make. You can tell by the words that they use and tones…what I think people forget when they're dealing with depression is that everyone has their depression, but everyone also has their sparks (Youth, Meeting C).

***IQ – Piliriqatigiingniq* (Collaborative Relationships)**

Further examples of *content* that related to *Piliriqatigiingniq* (Collaborative Relationships) as central to wellness were shared. One youth was able to recall an example of when a community member taught them the skill of deep breathing: "I was nervous to start working and someone told me, 'If you take deep breath and calm down'" (Youth, Meeting A). Other collaboration came in the form of youth helping other community members: "Breathing in and out because that part when I had to help [participant] talk to the other people, she did it after I asked it and she thanked me after she talked to them."

***IQ – Qanuqtuurunnarniq* (Problem Solving)**

Youth spoke of other benefits of playing I-SPARX, too, such as heightening *confidence* and *self-esteem*, and being able to share *coping strategies* with friends and community members to create a positive ripple effect:

> Umm, I think that after playing the game… I feel better and…calm and accomplished, 'cause…I beat the entire game…I think it's really great because it just heightens your self-esteem…[and] it's not only useful for you but it's also useful for anybody else that needs it…So if you have a friend…even just a complete stranger that's having a rough time, then you could even help them with it…and they can also help other people with it and you could just start a chain reaction and it's so happy. (Youth, Meeting C)

In a similar discussion, youth learned about the downsides of catastrophizing, and reflected on instances where they had recognized this behaviour:

> Like if I'm on like a skidoo, driving…my speed, but then…if I'm on with someone else, I just…overthink…the bad things that could happen, like if we're hitting a bump, it's like, oh I could fall off, oh we could crash…I just…way overthink things. (Youth, Meeting C)

In another discussion, were able to gain insight into the thoughts and behaviours of others who might be dealing with GNATs (Gloomy Negative Automatic Thoughts, a prominent concept in the game):

> It's very common, I see it a lot, and most cases, they are dealing with the GNATs, and the only way they know how to do it is going through that whole little phase of anger which could be disguised as depression. (Youth, Meeting C).

Following *psychoeducation* on the coping skill of deep breathing, many youth shared the skill with others in the community: "Breathing in and out, because that part when I had to help [name redacted] talk to the other people, she did it after I asked it and she thanked me after she talked to them" (Youth, Meeting D). Youth were also able to recall when this coping skill had been taught to them by a teacher to use when feeling nervous: "When I'm scared to do something, she tells me to take a few deep breaths" (Youth, Meeting D). In the context of *didactic activities* another CBT based strategy for improving mood and wellness, youth shared that, when they wanted to relax, going out together and spending time on the land and away from technology worked well:

> Really…good, when we're tired of the energy, or of the internet, or being on our phones, or people, we can just go to the land and go away where there's no electricity and when we come back we feel better (Youth, Meeting D).

Collaborative efforts were essential for helping others manage depression. Youth discussed behaviour changes such as talking to someone when feeling depressed instead of isolating:

> Just keeping it in, if you're going through a depression and you're not saying nothing and you're keeping yourself contained in your room, then it gets harder to actually let someone know. Whether it'd be a family member, a friend, a co-worker, it takes a lot to just sit down and talk to

> someone and say, “Hey, I have depression and I don’t know what to do.” So, it’s definitely hard to keep in but once it’s out, you’re relieved and you feel so much more, like a weight has lifted (Youth, Meeting C).

In the focus groups youth collaborated with facilitators to discuss playing the I-SPARX game as a coping strategy to distract themselves during tough times:

> I just feel like getting away from what’s happening, just knowing that you can play something or do something that’s not related to what’s happening in your home. So you’re just getting your mind off of it. I just think that that’s the most common thing. That’s really happening, the game definitely would help, just playing it (Youth, Meeting C).

I-SPARX provided many structured opportunities for learning problem-solving skills. One youth shared their *sense of achievement* as they resolved to overcome challenges in the game: “And I think it’s really cool because it’s like it’s real. And like you can beat it and deal with it in whatever way necessary or feels comfortable” (Youth, Meeting C). *Qanuqtuurunnarniq* (Problem Solving) was also demonstrated when one youth discussed the tendency to catastrophize as a learning experience when a relationship ends:

> They are in relationships and they don’t know that they’re still young, and they are so focused on that one person, and they’re like 13, and they’re just thinking about the relationship, and they’re going to stay together forever…[T]hen when it comes to an end, they’re like, “Oh, that’s the end of everything.” But then…after a long time, you are moving on eventually. And you’re just learning. (Youth Meeting C).

Using imagery was a problem-solving skill introduced in the game that youth enjoyed and adapted to their personal experiences and homelife: “I like to think about being in bed, ‘cause I’m alone and nobody will bother me, and also I like to think at Canada’s Wonderland on the slingshot cause my body is alone and calm.” (Youth, Meeting D).

Sub- Category 1: Resilience

This theme category captures youth's discussions of wellness strategies, and the examples they provided of *Resilience*, defined as the ability to positively cope, find hope, and foster constructive outcomes to overcome adversity (Kirmayer et al., 2011; Korhonen, 2007; Ungar, 2013). *Resilience* was exemplified in youth's comments in several ways, for example when they spoke about the use of sports as a coping strategy: "When I just [need] to get my feelings out, I play badminton or basketball to get my energy out" (Youth, Meeting D). Participants also recalled the importance of CBT skills like deep breathing: "[The facilitators] taught us how to control our breathing and how to get through tough times" (Youth, Meeting B).

Subtheme 1: Universality of Life's Problems. Youth expressed renewed *Resilience* in the context of dealing with negative thoughts, recognizing GNATs as embodying the *universality of life's problems*: "Like, it's not wrong to have GNATs. Everyone has their doubts and regrets and stuff in life that they don't want" (Youth, Meeting C); "And sometimes there is good reason to have [GNATs] and then you kind of have to cope with that. And other times it's just something that we keep doing that's not very productive" (Youth, Meeting C).

Subtheme 2: Perseverance. Youth expressed how SPARX gameplay cultivated hope, teaching *perseverance* in real life circumstances, and how young kids could use this learning to change their behaviour and attitude towards difficult situations:

> Yeah that's like, it's just like playing a game, obviously. Like, if you're playing a game and something happens, you die but then you can just refill back again and you just learn from that so you know how to get past that. And you just keep going, right? So when the kids play, they're going to learn that themselves. And in real life, that when something happens to you, bad, then you just learn from that and you're just going to pass that (Youth, Meeting C).

Subtheme 3: Psychoeducation on unhelpful emotion regulation strategies also provided skills to support *Resilience*, with youth for example getting a chance to reflect on the topic of rumination with a facilitator:

> So, rumination is basically when you have a negative thought or a negative emotion and you just think about it over and over again and you spend all your time thinking about it and you can't get your mind off of it. So, do you think rumination is something that, when your friends or even you yourself are going through a tough time, is something that you struggle with? (Facilitator, Meeting C).

Subtheme 4: Coping Strategies. Using *coping strategies* such as imagery, youth were able to set future goals and derive a positive outlook for themselves. One youth used imagery to imagine themselves in Norway, Sweden, and Finland. Additionally, this youth imagined themselves going back to school to graduate, get a "good paying job" and travel to the previously mentioned countries (Youth, Meeting D).

Sub- Category 2: Self-Efficacy

This category emerged as participants shared goals, actions to achieve those goals, and self-management skills. One youth exemplified agency with the following quote: "Same with…animals dying, so you're like, 'Oh they're dead, I can't do anything about it.' But then when you actually try to do it, you can actually save its life" (Youth, Meeting C). Breathing exercises were a CBT coping skill taught in workshops and in the I-SPARX game. Youth demonstrated *Self-efficacy* and agency with this coping skill as the facilitator noticed them practicing the skill after being introduced to it:

> So I saw you do [breathing exercises] I because I was standing right beside you, but …remember how yesterday we talked about how you can do it in secret and nobody has to know, did it maybe feel like you could do it in school if you were nervous or with friends if you needed to without them having to know? (Facilitator, Meeting A)

Youth demonstrated *Self-efficacy* when they collaborated in the development of the post-gameplay outcome measure. After the facilitator asked what participants thought the I-SPARX game helps with, five youth reflected that it helped with: *goal-setting*, *self-esteem*, emotions, setting your mind to something, general coping, and developing life skills (Youth, Meeting C).

Subtheme 1: Confidence. One youth talked about the younger generation needing to grow the mindset of c*onfidence* when learning something new: "Yeah, like the younger generation that is learning how to do things, their behaviour changes and if they think they don't know how, they don't want to learn" (Youth, Meeting D).

Subtheme 2: Sense of Achievement. *Qanuqtuurunnarniq* (Problem Solving) during gameplay gave youth a *sense of achievement*:

> I feel like if the kids get involved and knowing that they can get feedback about this game and they want to see something inside the game, and they know that they're achieving something, that they're doing something, that they like to do, which is playing games. So they like to see something that they've put in that the game is making them feel better about themselves. Or even just like a look or something inside the game that's happening that would give them more room to do more things. (Youth, Meeting C)

Subtheme 3: Goal-setting. Sports were indicated as a way to set personal goals by the youth, and being active was integrated into the post-game outcome measure: "Umm, I think… something as simple as…do you do sports or do you have at least 15 minutes out of your day where you just do something?" (Youth, Meeting C).

Discussion

The current study was a sub-study of the I-SPARX project; with the aim to evaluate whether this research initiative met criteria for a Two-eyed Seeing approach. Two-eyed seeing is the practice of

blending Indigenous knowledge and perspectives with Western knowledge and perspectives for holistic understanding and decision-making. For the purpose of the present study, the evaluation focused on whether this project satisfied requirements set forth in the IQ philosophy while also assessing an intervention that is considered "evidence-based" in western (or, as Nunavummiut refer to the rest of Canada "southern") contexts.

The I-SPARX initiative focused on a commonly used western intervention (c-CBT), adapted to Inuit culture through a collaboration with Inuit youth and delivered with the traditional Inuit theoretical framework Inuit Qaujimajatuqangit (IQ) in mind. In the Nunavut context it is important to use IQ as a guide and framework because it aligns with the Inuit Tapiriit Kanatami (ITK) organization's National Inuit strategy on research. Two key points of this research strategy emphasize enhancing the ethical conduct of research and building capacity in Inuit Nanangat research (Inuit Tapiriit Kanatami [ITK], 2018). The I-SPARX youth engagement project evaluated a culturally adapted videogame intervention designed to make CBT skills available to Inuit youth through an electronic platform . The current evaluation focused on both *process* (the process of collaboratively adapting an existing intervention) and *content* (the concepts taught in a c-CBT intervention). In this report, *process* referred to the activities that participants engaged in during the ISPARX initiative as a whole (e.g., psychoeducation, group decision-making), and *content* referred to the c-CBT principles and skills conveyed in the I-SPARX game (e.g., deep breathing, examining unhelpful thoughts).

Aspects of the I-SPARX initiative examined in this study were found to align primarily with three of the eight IQ principles: *Piliriqatigiingniq* (Collaborative Relationships)*, Qanuqtuurunnarniq* (Problem Solving)*,* and *Pilimmaksarniq* (Skills and Knowledge Acquisition). *Piliriqatigiingniq* (Collaborative Relationships) is the IQ practice of working together for a common goal or purpose. This IQ principle stresses group effort over individual effort to work towards: the common good, shared leadership, volunteering, supportive behaviour, strong relationship building and consensus building.

Qanuqtuurunnarniq (Problem Solving) is the IQ practice of being resourceful to overcome obstacles. This IQ skill emphasizes innovative and creative use of resources and demonstrating adaptability and flexibility. *Pilimmaksarniq* (Skills and Knowledge Acquisition) is the IQ practice of building a repertoire of competences. This IQ principle emphasizes drawing on learning and experience for success and productivity of the individual and their community (Bentham, 2016, NDE, 2007).

The study objectives were addressed with the following four questions:

From the perspective of Inuit youth leaders in the I-SPARX project: 1) Did any features of the *process* of collaboratively developing I-SPARX meet the principles set out in the IQ framework? 2) If so, what aspects of the *process* of adapting fit with IQ principles, and which principles were most prominent? 3) Did any features of the CBT theory and skills underlying the I-SPARX game meet principles set out in the IQ framework? 4) If so, what aspects of the *content* of the intervention that was evaluated in this project fit IQ principles, and which principles were most prominent?

Did features of the *process* of collaboratively developing I-SPARX meet the principles set out in the IQ framework? And, if so, what aspects of the *process* of adapting fit IQ principles, and which principles were most prominent?

We found that several features of the *process* of collaboratively developing I-SPARX did meet the principles set out in the IQ framework. Within 303 codes recorded for the project's *process* in the meetings reviewed for this study, 151 codes reflected the IQ principle of *Piliriqatigiingniq* (Collaborative Relationships). Within this major theme, there were five specific activities (discussed as "subthemes" above): *didactic activities*, *facilitated discussions*, *decision-making*, *gameplay*, and *consultation* all illustrated the collaborative *process* of developing I-SPARX. This high representation is likely due to the inclusive process of developing I-SPARX, which was based on collaborative focus groups involving both youth participants and facilitators. This included getting feedback for gameplay and for developing a culturally appropriate outcome measure and involved recalling learned material during activities. While

didactic activities involved one-directional teaching and knowledge transfer, *facilitated discussions* were open and dialogical*. Decision-making* sessions involved integrating feedback about the game into the design, knowledge mobilization activities, and developing the outcome measure. *Gameplay* involved youth leaders' immersion in the teachings of SPARX during its adaptation. *Consultation* refers to the adaptation of the I-SPARX game to respectfully represent Inuit culture.

Broadly, youth collaborated on developing the outcome measure, sharing CBT skills with others, sharing ideas from the game with others and acting as role models for younger people. As role models, youth leaders recognized that other youth would take an interest in playing the game if they showed enthusiasm. A similar finding emerged in a study by Waddell et al. (2017) in which Inuit Elders recognized that positive role models are important for community wellness. In addition, while learning CBT skills youth collaborated with others. For example, youth learned CBT skills as a group, they suggested doing breathing exercises in a group, and being able to talk with their grandparents. The latter shows an example of strong relationship building as well as utilizing coping skills.

Piliriqatigiingniq (Collaborative Relationships) emphasizes the group over the individual, shared leadership and relationship building (Bentham, 2016; NDE, 2007). These items were reflected both in the project's formal process (i.e. decisions about methods and content of the intervention were made collaboratively) and in the transcript data. In the focus group interviews, youth frequently emphasized group needs over individual needs. As a group, youth suggested culturally appropriate changes to include in the Inuit version of the game. To make sure I-SPARX mattered in their communities, youth suggested showing their cousins, friends, and presenting the game at the school. In another discussion, youth were able to discuss what signs of depression looked like in other people. In developing the outcome measure, youth collaborated on what questions they thought were relevant. Items they suggested were questions related to healthy relationships, homelife, feeling loved, using a Likert scale, and connectedness to culture. *Piliriqatigiingniq* (Collaborative Relationships) was also illustrated by the

relationship building that took place between youth and the facilitators. Such bonding for example occurred during focus group sessions where youth provided input on items such as learning skills, game feedback, and developing the outcome measure, but they also often shared personal experiences and insights. Teamwork was also seen when youth worked with other youth during cultural activity interludes such as the igloo building during a retreat.

Piliriqatigiingniq (Collaborative Relationships) is an IQ principle that has been used in Inuit culture to guide implementation, frameworks, and research designs (Arnakak, 2002; Barker et al., 2021; Hall et al., 2015; Hatcher et al., 2009). Furthermore, community-based participatory research has been shown to be effective for Inuit research. The collaborative efforts help members of the community identify strategies for wellness and allow Inuit and non-Inuit people to work together to improve the Inuit community (Waddell et al., 2017). This is reflected in the research done by Kral (2012) where they recognized that success for community-initiated wellness programs was dependent on acknowledging community members as knowledgeable and valuing their opinions. Further, in a study by (Snow & Ochalski, 2018) the IQ framework was used in focus groups to gain perspectives from students and teachers. The goal was to help students analyze personal work and develop strategies to demonstrate mastery and skills in a collaborative environment. That study shares similarities with the current study which was built around *Pilimmaksarniq* (Skills and Knowledge Acquisition) (i.e., acquiring research skills and CBT skills within an Inuit specific context). In similar study by Lewthwaite and Renaud (2009), IQ principles were used to guide focus groups with Inuit youth to develop a science curriculum. In the present study, the *process* of developing SPARX into Inuit-SPARX was designed to enhance cultural pride in addition to supporting Inuit youth mental health and promoting resilience (see Bohr et al., 2023). In addition, adapting the e-Intervention to include Inuit culture based on the feedback of Inuit youth served to enhance the relevance and relatability of SPARX, while simultaneously being an intervention tool for mental health and wellness (Litwin, et al., 2023).

Inuit youths' responses during focus groups in this study were indicative of being part of the *process* of collaboratively developing I-SPARX, which appeared to meet three of the principles set out in the IQ framework: *Piliriqatigiingniq* (Collaborative Relationships), *Pilimmaksarniq* (Skills and Knowledge Acquisition) and *Qanuqtuurunnarniq* (Problem Solving). In that sense the Inuit Eye, of the Two-Eyed Seeing model that provided the overarching framework for this study, was actively implemented.

Did any features of CBT theory and skills underlying the I-SPARX game meet principles set out in the IQ framework? And, if so, what aspects of the *content* of the intervention that was evaluated in this project fit IQ principles, and which principles were most prominent?

Features of CBT theory and skills underlying the I-SPARX game also apparently met principles set out in the IQ framework. This was evidenced by the 123 codes recorded for *content* that exemplify the three IQ principles. Within the major themes emerging from the analysis of the *Content* of the studied intervention, there we identified two subcategories: *Resilience* and *Self-Efficacy*. There are four subthemes under *Resilience*: *universality of life's problems*, *perseverance*, *psychoeducation*, and *coping strategies*. The subcategory of *Self-Efficacy* has four subthemes: *confidence*, *self-esteem*, *sense of achievement* and *goal-setting*. All these subthemes exhibited features of CBT theory and skills underlying the I-SPARX game that were compatible with principles set out in the IQ framework.

Youth discussed *content* in the context of *Pilimmaksarniq* (Skills and Knowledge Acquisition) in several ways. Broadly, youth shared that they used CBT skills to: help others, share their skills with other people, recognize depression in others, enhance their personal learning on mental health, and learn a repertoire of coping strategies. CBT skills youth learned included muscle relaxation, imagery, relaxation exercises and breath control. Breathing exercises were a CBT skill learned during activities but were also activitely practiced outside the focus groups. Once learned, youth used breath control alone or with friends. Furthermore, youth used imagery to imagine a calming atmosphere at home, imagine themselves on amusement park rides, travelling to different countries, and imagine themselves

graduating and getting a good job. These coping strategies are in line with the definition for *Pilimmaksarniq* (Skills and Knowledge Acquisition) as they may be part of empowerment and capacity building through knowledge and skills acquisition. Youth found the CBT knowledge in the game helpful as psychoeducation. In the discussion groups, youth shared that they found that the game helped with coping, goal-setting, learning life skills, motivation, perseverance, agency, hope, confidence, self-esteem, sharing skills, understanding rumination, understanding catastrophizing, and dealing with negative thoughts. Youth also thought the game helped with resilience as the game teaches youth to keep trying. This in turn gives hope and teaches perseverance. Finally, youth recalled that the game helped them learn how to control their breathing and get through tough times. Overall, many examples were given for specific *Pilimmaksarniq* (Skills and Knowledge Acquisition), demonstrating empowerment and building a repertoire of coping skills when using a CBT tool. More importantly, we were able to support the notion that CBT may be very compatible with IQ principles and, more broadly, some aspects of Inuit traditional knowledge.

The teachings of *Problem-Solving* in CBT are also compatible with IQ. Many teachings in the I-SPARX CBT-based game involve problem-solving strategies. After playing the game, youth recalled CBT skills to help with emotion, coping, self-esteem, goal setting, GNATs, using the game as a distraction, resilience, changing tactics, learning to keep trying despite challenges in life. Furthermore, youth developed other ways to combat depression by not isolating themselves when feeling down and reaching out to others to talk. Furthermore, going out on the land (a strategy compatible with CBT-based activity scheduling or behaviour activation) was useful when they felt tired of being on the internet and on their phones. Youth felt that being out on the land with no electricity was a way to recharge their energy. Overall, these are examples of compatibility of CBT *content* for the IQ of *Qanuqtuurunnarniq* (Problem Solving) as they demonstrate being resourceful and seeking resources.

Several studies support the concept of CBT being compatible with IQ. In a study by Barker et al. (2021), the researchers used Two-Eyed Seeing with IQ and CBT principles to co-create a culturally relevant toolkit for smoking cessation. Similar to the current study, Barker and colleagues adapted CBT skills to IQ to make the toolkit reflective of Inuit traditional learning, knowing, healing and recovery. In addition, IQ was used to personalize the activities such as having participants generate their own examples of how IQ relates to tobacco use. IQ was also incorporated into discussions, incorporated family and community care and was overall used as a strength-based approach. Furthermore, the CBT activities were adapted to include land-based activities and Elders. In a study by Litwin et al. (2023) computerized CBT programs such as the original SPARX program showed potential for enhancing youth resilience, empowerment and self-efficacy and alleviating depressive mood. This and similar studies on computerized CBT applications are especially applicable to marginalized and isolated Indigenous communities, opening up the possibility of providing culturally appropriate interventions remotely (Cheek et al., 2014; Lucassen et al., 2015; Shepherd et al., 2015; Thabrew et al., 2016). In addition, low intensity eCBT self-help tools may help overcome barriers, promote cultural safety, and protect participant anonymity which is pertinent in small communities (Nelson et al., 2014). Other e-intervention studies support that notion that this style of intervention minimizes barriers that are specific to marginalized youth when they are accessing mental health services (Lucassen et al., 2015; Shepherd et al., 2015; Granic et al., 2014; Halldorsson et al., 2021; Sethi et al., 2010).

In summary, from the perspective of Two-Eyed Seeing, both the *process* of developing I-SPARX and the intervention's *content* appeared to be reflective of the three IQ principles of *Piliriqatigiingniq* (Collaborative Relationships), *Pilimmaksarniq* (Skills and Knowledge Acquisition) and *Qanuqtuurunnarniq* (Problem Solving).

Two-Eyed Seeing

The study focused on whether the mental wellness focused I-SPARX project - both the *process*

of its implementation and the *content* that was delivered – met criteria for Two-Eyed Seeing. For this study, Two-Eyed Seeing was conceptualized as a perspective that integrates both Inuit knowledge and philosophy in the form of Inuit Qaujimajatuqangit (IQ), and Western or Southern "evidence based" knowledge in the form of a culturally adapted Cognitive Behaviour approach (CBT). To examine this question, I reviewed interview and focus group data from three project meetings and identified the processes, as well as the content of activities that illustrate how this project may have met criteria for Two-Eyed Seeing. Namely, I sought to demonstrate that, in addition to delivering content based on CBT as stipulated in the project's goals, the CBT content, the process of adapting this content to the Inuit context, and the collaborative processes that directed the project activities as a whole conformed to several important principles of Inuit Qaujimajatuqangit (IQ). As discussed above, the study data support this cultural representation in the development and evaluation of mental health, and wellness e-interventions designed for Inuit youth.

Overall, the aspects of CBT skills and psychoeducation that were evaluated in this project appeared fit well with the IQ principles. Features of the process of collaboratively developing I-SPARX met the principles set out in the IQ framework. The aspects of *Piliriqatigiingniq* (Collaborative Relationships) was represented as the most prominent IQ principle overall. Features of the CBT theory and skills underlying the I-SPARX game also did meet the two principles set out in the IQ framework. The other five IQ principles *Inuuqatigiitsiarniq* [ee-nu-oo-kha-tee-geet-see-are-neek] (Respecting others), *Tunnganarniq* [tune-ng-an-are-neek] (Being open), *Pijitsirarniq* [pee-yit-seer-ar-neek] (Serving the community), *Aajiiqatigiingniq* [ah-yee-kha-tee-gee-ning-neek] (Consensus-Decision making), and *Avatimik Kamattiarniq* [ah-va-tee-meek Ka-mat-tee-are-neek] (Environmental Stewardship), should be considered in future intervention study design and the content of interventions to expand on Inuit cultural perspectives in research

By using Two-Eyed Seeing, this study brings different knowledge groups together to be examined simultaneously. This helps strengthen Indigenous-based research by contributing Two-Eyed Seeing to the literature and may help address social problems in Indigenous communities across Canada. While there have recently been criticisms directed at researchers who use Two-Eyed Seeing too liberally outside the context within which the framework was first introduced, i.e., Mi'kmaw culture specifically, and for ignoring the many challenges inherent in trying to marry wholistic Indigenous approaches with generally more reductionist and positivist western science, it remains a compelling model to adopt (Broadhead & Howard, 2021). Two-Eyed seeing was favoured, and considered useful by the youth leaders and community partners in the present study, and was adopted for that reason. Future studies should perhaps examine the Two-Eyed framework more critically and make use of additional cultural traditions as organizing principles for the research, for example the tradition of Inuit storytelling which is a strong part of Inuit culture.

Limitations and Future Directions

There are very few systematic examinations of Inuit-centered research initiatives that were designed to query the latter's fit with culturally specific frameworks or philosophies. In that sense, the current qualitative study was novel as it utilized Two-Eyed Seeing considering Inuit cultural values and perspectives, and a CBT based e-intervention. The study has several strengths: the study was community directed; it focused on the voices of Inuit youth, and was conducted in under-studied and under-served artic communities. Data were collected in locations that are remote and difficult to access. Furthermore, part of this study was conducted during the pandemic, and many adaptations to the original protocol allowed for its completion. However, there are also several limitations to be considered. First, there are no viable comparison studies in the current literature available to compare the efficacy of I-SPARX to, or similar projects, nor the cultural appropriateness of such initiatives or their evaluations. Second, this sub-study of I-SPARX used a small sample of Inuit youth from five communities in Nunavut, which only

represents a fraction of Inuit youths' perspectives. The small sample size makes it hard to generalize the results to the rest of the Inuit population and ensure that game content aligns more broadly with Inuit culture. This has implications for external validity of the study findings. Thirdly, sections of the transcripts had poor audio quality and were difficult to transcribe accurately. Finally, only three out of the eight IQ principles were represented in this study, and some principles did not receive significant endorsement. For example, future intervention studies might use multi-player gameplay to address the low representation of the IQ principle of *Piliriqatigiingniq* (Collaborative Relationships) for *content*. This study will hopefully help inform efforts of health practitioners and researchers to enhance their learning about Inuit culture. In addition, the current study can help inform future interventions more generally, by adding literature on Inuit youth resilience, self-efficacy, and on how to integrate IQ into intervention research. Furthermore, this study will shed light on barriers to Inuit mental health and inform non-Inuit on respectful incorporation of Inuit knowledge into evidence structures and processes in research. The findings of this study can be useful for I-SPARX researchers to better interpret the results of the test trials.

Findings could be useful for incorporating culturally specific frameworks in future mental health research, in particular suicide prevention research (Constanza et al., 2020). Inuit youth suicide is a serious issue in communities, and this makes it even more important to identify factors that will support resilience. Additional research should explore aspects that nurture Inuit culture and foster community connectedness for youth. Finally, by investigating the direct impact of harm caused by colonialism, and poor structure of mental health systems for Inuit youth, research can advocate for long overdue policy changes.

Conclusion

In conclusion, the development process and content of I-SPARX demonstrated compatibility with the three IQ principles: *Piliriqatigiingniq* (Collaborative Relationships), *Pilimmaksarniq* (Skills and

Knowledge Acquisition), and *Qanuqtuurunnarniq* (Problem Solving). The aspects of CBT skills and psychoeducation that were evaluated in this project appeared to fit well with the IQ principles. Features of the process of collaboratively developing I-SPARX met the principles set out in the IQ framework. The study suggests that CBT has the potential to be adapted to align with Indigenous knowledge and culture, and may be a valuable tool for supporting mental health and empowerment of youth in Indigenous communities.

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Appendix A

Explanation of Two-Eyed Seeing

More on Two-Eyed Seeing

After some years experience in attempting to explain the Guiding Principle of Two-Eyed Seeing to various audiences, Albert has also begun to say: "Two-Eyed Seeing is hard to convey to academics as it does not fit into any particular subject area or discipline. Rather, it is about life: what you do, what kind of responsibilities you have, how you should live while on Earth … i.e., a guiding principle that covers all aspects of our lives: social, economic, environmental, etc. The advantage of Two-Eyed Seeing is that you are always fine tuning your mind into different places at once, you are always looking for another perspective and better way of doing things."

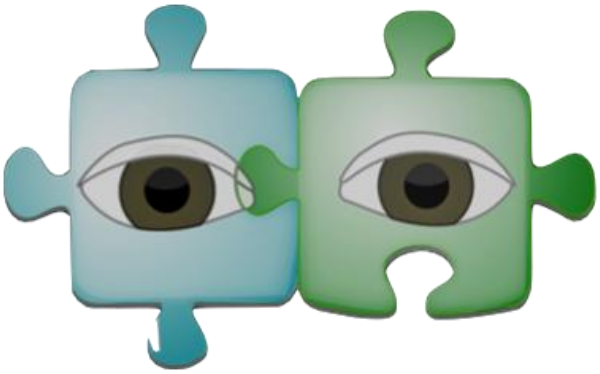
In bringing Two-Eyed Seeing into the Integrative Science journey, Elder Albert has passionate concerns for the well-being and future of Aboriginal peoples and Indigenous knowledges. This is evident when he states what happens in its absence: "When you force people to abandon their ways of knowing, their ways of seeing the world, you literally destroy their spirit and once that spirit is destroyed it is very, very difficult to embrace anything – academically or through sports or through arts or through anything – because that person is never complete. But to create a complete picture of a person, their spirit, their physical being, their emotions, and their intellectual being … all have to be intact and work in a very harmonious way."

Integrative Science research on visuals to help Two-Eyed Seeing

Iconic visuals have been developed within the Integrative Science journey for the Guiding Principle of Two-Eyed Seeing.

Initially we simply used an image of two eyes:

Around 2007, we switched to an image in which two eyes are positioned behind two connected pieces of a jig-saw puzzle:



This switch followed Elder Albert's encouragement that we emphasize that Mi'kmaw First Nations' understandings are but one view in a multitude of Aboriginal and Indigenous views … and similarly so are the various disciplines in the Western sciences. All of the world's cultures (which we take include Western science) have understandings to contribute in addressing the local to global challenges faced in efforts to promote healthy communities. One might wish to talk about Four-Eyed Seeing, or Ten-Eyed Seeing, etc., as four perspectives or ten perspectives are brought into the collaboration.

Furthermore, Albert indicates "the two jig-saw puzzle pieces help remind us that, with respect to Aboriginal Traditional Knowledges [Indigenous knowledges], no one person ever has more than one small piece of the knowledge." There is a need to recognize that Traditional Knowledges draw upon the community of Elders and other Knowledge Holders (i.e., the knowledge is collective), as well as the collective consciousness of the people. So, here too, one might wish to talk about multiple-eyed seeing.

Two-Eyed Seeing - more explanation, including "weaving back and forth"

The guiding principle of Two-Eyed Seeing further helps us to acknowledge the distinct and whole nature of Indigenous knowledge and ways of knowing (i.e., such are represented as a whole eye). Similarly, it helps us recognize the distinct nature of Western knowledge and ways of knowing (i.e., such are also represented as a whole eye). At the same time, Two-Eyed Seeing asks that these two eyes work together (i.e., as they do in binocular vision).

It may be that in a particular set of circumstances we will choose to call upon the strengths within Indigenous sciences, whereas in another set of circumstances we might choose to call upon those within the Western sciences. Two-Eyed Seeing can require a "weaving back and forth" between knowledges, and this will draw upon abilities to meaningfully and respectfully engage in an informed manner in collaborative settings. To help us do this, we have developed the four big pattern knowledge understandings (with visuals) as tools. Read more about our efforts in this regard and about weaving capacity, under **co-learning** and under **integrative science research to highlight the philosophies in our science stories**.

Two-Eyed Seeing, in that it speaks directly to the setting of collaborative, cross-cultural work, intentionally seeks to avoid the situation becoming a clash between knowledges, domination by one worldview, or assimilation by one worldview of the knowledge of another.

Cape Breton University. (n.d.). Two-Eyed Seeing. Institute for Integrative science and Health. http://www.integrativescience.ca/Principles/TwoEyedSeeing/

Appendix B

Explanation of the Inuit Qaujimajatuqangit Principles

What it IQ?

"Inuit Qaujimajatuqangit (khow-yee-ma-yat-too-khan-geet) is often translated as "Inuit traditonal knowledge" or sometimes "Inuit traditional technology". It is often abbreviated as "IQ". It comes from the verb root "qaujima-" meaning "to know" and could be literally translated as "that which has long been known by Inuit"."

The 8 IQ Principles

1)*Inuuqatigiitsiarniq* [ee-nu-oo-kha-tee-geet-see-are-neek]: Concept of Respecting Others

Showing respect and a caring attitude for others. When people consider their relationship to people and behave in ways that build this relationship, they build strength both in themselves and in others and together as a community. This is foundational to Inuit ways of being.

2)*Tunnganarniq* [tune-ng-an-are-neek]: Concept of Being Open

Being welcoming to others, being open in communications and inclusive in the ways of interacting. Demonstrating this attitude is essential in building positive relationships with others.

3) *Pijitsirarniq* [pee-yit-seer-ar-neek]: Concept of serving

The concept of serving is central to the Inuit style of leadership as is the measure of the maturity and wisdom of an Inuk. Key here is the understanding that each person has a contribution to make and is a valued contributor to his/her community. Students will be expected to demonstrate this kind of leadership and commitment to serving the common good.

4) *Aajiiqatigiingniq* [ah-yee-kha-tee-gee-ning-neek]: Consensus-Decision Making

The concept of consensus decision-making relies on strong communication skills and a strong belief in shared goals. All students are expected to become contributing members of their community and to participate actively in building the strength of Inuit in Nunavut. Being able to think and act collaboratively, to assist with the development of shared understandings, to resolve conflict in consensus-building ways, and to consult respecting various perspectives and worldviews, are expectations that cross all curriculum areas.

5) *Pilimmaksarniq* [pee-lee-eem-mack-sar-neek]: Concept of Skills and Knowledge Acquisition

The concept of skills and knowledge acquisition and capacity building is central to the success of Inuit in a harsh environment. Building personal capacity in Inuit ways of knowing and doing are key expectations

for students. Demonstrating empowerment to lead a successful and productive life, that is respectful of all, is a powerful end goal of our educational system.

6) *Qanuqtuurungnarniq* [kha-new-kht-too-rue-ng-are-neek]: Concept of Being Resourceful to Solve Problems

The concept of being resourceful to solve problems, through innovative and creative use of resources and demonstrating adaptability and flexibility in response to a rapidly changing world, are strengths all our students should develop. Resourcefulness should be demonstrated in all learning and also thinking that seeks to improve the context in which Inuit live.

7) *Piliriqatigiingniq* [pee-lee-ree-kha-tee-gee-ing-neek] Concept of Collaborative Relationship or Working Together for a Common Purpose

The concept of developing collaborative relationships and working together for a common purpose. The essential Inuit belief that stresses the importance of the group over the individual should pervade all our teaching. Expectations for students will reflect working for the common good, collaboration, shared leadership and volunteerism. Piliriqatigiingniq also sets expectations for supportive behaviour development, strong relationship-building and consensus-building.

8) *Avatimik Kamattiarniq* [ah-va-tee-meek Ka-mat-tee-are-neek]: Concept of Environmental Stewardship

The concept of environmental stewardship stresses the key relationship Inuit have with the world in which they live. Students will be expected to articulate respect for this mutually interdependent relationship and to demonstrate responsible behaviors that seek to improve and protect the relationship in ways that meet global challenges to environmental wellness."

Bentham, M. (2016, April 9). Principles of Inuit qaujimajatuqangit: guiding principles and values of Inuit Qaujimajatuqangit (IQ). Word Press.

https://leapintothevoidwithme.wordpress.com/2016/04/09/principles-of-inuit-qaujimajatuqangit/

Appendix C

Description of content and core skills covered in each module (level) of SPARX

Level 1 Cave province: Finding hope

-Psychoeducation about depression and an introduction to the cognitive behavioural therapy model

-Introducing GNATs (Gloomy Negative Automatic Thoughts)

-Introducing "hope" (people recover from depression)

-Relaxation: controlled breathing

Level 2 Ice province: Being active

-Activity scheduling and behavioural activation

-Relaxation: progressive muscle relaxation

-Basic communication and interpersonal skills

Level 3 Volcano province: Dealing with emotions

-Dealing with strong emotions: anger and hurt feelings

-Interpersonal skills: assertiveness, listening, and negotiation

Level 4 Mountain province: Overcoming problems

-Problem solving using STEPS: Say the problem, Think of solutions, Examine the pros and cons, Pick one and try it, See what happens Cognitive restructuring-identifying SPARX: Smart, Positive, Active, Realistic, X-factor thoughts

Level 5 Swamp province: Recognising unhelpful thoughts

-Cognitive restructuring—recognising different types of GNATs

Level 6 Bridgeland province: Challenging unhelpful thoughts

-Cognitive restructuring—learning to challenge or "swap" negative thoughts for helpful ones

-Interpersonal skills continued: negotiation skills

Level 7 Canyon province: Bringing it all together

-Recap of all skills

-Mindfulness: tolerating distress

-Relapse prevention: knowing when to ask for help

Adapted from the following 2 sources:

Merry, Stasiak, K., Shepherd, M., Frampton, C., Fleming, T., & Lucassen, M. F. G. (2012). The effectiveness of SPARX, a computerised self help intervention for adolescents seeking help for depression: randomised controlled non-inferiority trial. *BMJ, 344*(7857), 16–16. https://doi.org/10.1136/bmj.e2598

Shepherd, M. (2011). An investigation into the design, applicability and evaluation of a computerised cognitive behavioural therapy programme-SPARX for Māori young people experiencing mild to moderate depression. Retrieved from https://researchspace.auckland.ac.nz/handle/2292/9900

Appendix D

Coding Rules for Determining *Content* Versus *Process*

A)Process: Refers to the activities of the youth leaders and the initiative as a whole.

Inclusion Criteria:

1. Referring to psychoeducation skills

2.Has to do with project activities

3. Questions related to CBT or wellness asked by the researcher.

4.An activity that took place in the project that exemplifies the IQ principle of skills and knowledge acquisition, collaborative activities or *Qanuqtuurunnarniq* (problem solving).

Examples:

1)When a facilitator teaching CBT principles or relaxation.

2)When a youth discussion where there are contributions to suggesting changes to the game or to define "wellness".

3)When youth spontaneously refer to a project activity they enjoyed or want to do that falls into one of the 3 IQ categories.

Exclusion Criteria:

1.Events that happened outside the project such as an event that happened in the community.

2.Each response to a question by researchers.

- i.e. collaborative relationships and *Qanuqtuurunnarniq* (problem solving) would be coded ONCE when Leah asks about definitions of wellness and the youth respond as a group/each contribute definitions/examples,

3.Each time a youth answers in an activity.

To clarify: some answers were examples of CBT while other responses were “yeah”or “I agree”.

Special note:

- **Skills acquisition** would be coded if a participant **SPONTANEOUSLY** (i.e. NOT in response to a researcher's specific question) mentioned "I tried the deep breathing from the game last night" or **Collaborative relationships** would be coded if they offered "we should all get together and figure this out".

B)Content: Refers to CBT principles and activities.

Inclusion Criteria:

1)CBT skills (indicated in brackets in the transcript) are coded as skills acquisition.

2) A CBT principle/activity that can be classified as skills and knowledge acquisition, collaborative activities or *Qanuqtuurunnarniq* (problem solving) is:

i) **Taught explicitly** (e.g. when Leah teaches about relaxation)

OR

ii)**Mentioned** by a participant when talking about the project (e.g. a youth talks about learning about GNATS/ about working out a problem with their friend instead of getting angry, etc...).

Exclusion Criteria:

1)References to gameplay such as design, language, subtitles ect.

Special Note:

Remember we are **trying to gauge how often the IQ principles** Pilimmaksarniq (Skills acquisition), Piliriqatigiingniq (Collaborative relationships) and Qanuqtuurunnarniq (Problem solving) **came into play specifically as they apply to CBT theory/application in this project.**

Appendix E

INFORMED CONSENT FORM

Date:	April 2020
Study Name:	Making I- SPARX fly in Nunavut
Principal Investigator:	Dr. Yvonne Bohr, C.Psych., York University
Co-Investigators:	Ms. Chelsea Singoorie, Nunabox, Ms. Cécile Guérin, Embrace Life Council, Dr. Deborah Pepler, Dr. Sarah Flicker, Dr. Farah Ahmad, Dr. Jonathan Weiss, Dr. Gordon Flett, Dr. Jennine Rawana, Dr. Jennifer Jenson, Dr. Sally Merry, Dr. Mathijs Lucassen, Dr. Matthew Shepherd
Sponsor:	The Canadian Institutes of Health Research

PURPOSE OF THE RESEARCH: The goal of this project is to develop and evaluate an Inuit-specific adaptation of the computerized SPARX (Smart, Positive, Active, Realistic, X-factor thoughts) intervention program for youth. The SPARX program was developed to help youth who are at risk for depression learn new skills for dealing with feelings of depression or stress.

We have completed a pilot study that showed that a Māori version of SPARX was promising in decreasing symptoms of depression. During the pilot study, youth participants and community clinicians recommended creating an Inuit-specific version of the program. It was recommended that this would increase interest in the program and make it more relatable. A culturally appropriate version of SPARX (I-SPARX) may increase individual resilience through enhancing cultural pride and community wide resilience.

In Phase 1 of the project, we visited 5 communities across Nunavut and gathered information about how we could make the SPARX program more relevant for Inuit youth. The Pinnguaq organization has taken this feedback and has generated a modified version of the SPARX game: I-SPARX. We are now in Phase 2 of the project, where Inuit youth in several communities will participate in playing the newly adapted I-SPARX in order to evaluate its effectiveness.

WHAT WILL YOU BE ASKED TO DO: Participation in this study is voluntary. If you agree to participate in this study, you may be asked to:

A. Play 7 levels of the new I-SPARX game over the course of about 3 weeks. Each level should take 20-30 minutes to complete.
B. Provide feedback on your thoughts and mood in a questionnaire that has been designed with members of your community to assess wellness, resilience and general mental health. The questionnaire should take 10-15 minutes to complete.
C. If you are interested, you may be asked to provide feedback on your thoughts and moods through interview and/or focus groups. Interviews/focus groups may take approximately an hour to complete.
D. If you are interested, you may be asked to provide feedback on your experience of the process of being involved in this project through interviews and/or focus groups. Interviews/focus groups may take approximately an hour to complete.
E. If you are interested, you may participate in workshops led by the I-SPARX research team. Workshops will vary in length.

RISKS AND DISCOMFORTS: Some of the questions regarding mental health may feel difficult or upsetting. For example, some questions will relate to the experiences of people with low mood or depression and some experiences that are linked to symptoms of depression. The community facilitator will be available to help you if you feel uncomfortable or start to feel upset. If you feel discomfort, or experience negative thoughts at any point before, during or after participating in the I-SPARX retreat, the community facilitator will be available to answer any questions you may have. We have also gathered information about resources in your community that you can access for help and support. This information will be shared with you by your community facilitator. You can also stop participating in the study at any point because participation is voluntary.

BENEFITS OF THE RESEARCH AND BENEFITS TO YOU: The goal of this study is to develop a culturally appropriate wellness intervention that is fun and useful for young people when they feel they are experiencing low mood or depression. You may or may not benefit directly from taking part in this study. We hope that by helping evaluate the I-SPARX program, you will feel connected to your community, culture and empowered to support your wellness and the wellness of others in your community.

VOLUNTARY PARTICIPATION: It is entirely your choice whether or not you agree to participate in this study. If you do <u>not</u> agree to take part in the study, this will have no impact on your participation in any of the programs offered by the organization that suggested your participation. Your decision not to participate in the study will have no influence on the nature of your relationship with any of the members

of this research team and it will not affect the mental health care services you receive now or in the future.

WITHDRAWAL FROM THE STUDY: If you do agree to take part in the study, then you have the right to only participate in the parts that you are comfortable with. You can also stop participating in the study at any time, for any reason. Your decision to stop participating or to refuse to discuss particular subjects will have no impact on your participation in any of the programs offered by the organization that suggested your participation. Your decision to withdraw from the study will have no influence on the nature of your relationship with any of the members of this research team and it will not affect the mental health care services you receive now or in the future. If you decide to withdraw from the study, all information about your participation will be immediately destroyed.

CONFIDENTIALITY: All information you share during the research project will be kept anonymous: that means that your name will not appear in any report or publication of the research. All personal information will be removed from the collected documents and will be replaced with an identification number. The information you share is only for the purpose of the evaluation of the I-SPARX program.

USES OF RESEARCH DATA: The data collected for this project belong to the individual communities in which these data were collected. With community representatives' permission, the information will be presented to the communities, and also to scientific meetings, and published in scientific journals (always without any names attached). Some of the information may be written up in research reports including PhD dissertations and/or Masters' theses. Data will be used as long as the community deems it useful.

QUESTIONS ABOUT THE RESEARCH? If you have questions about the research in general or about your role in the study, you can contact your local contact person, the community facilitator, whose number you will be given at the beginning of your participation. You can also contact Yvonne Bohr at 416-736-2100 ext. 40561.

This research has been reviewed and approved by the Nunavut Research Institute, the Human Participants Review Sub-Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines.

If you have any ethical concerns, questions about this process, or about your rights as a participant in the study, please contact either the Graduate Psychology Program office (telephone 416-736-5115 ext. 66225)

or Ms. Alison Collins-Mrakas at the Office of Research Ethics, 5th Floor, York University Research Tower (telephone 416-736-5914 or e-mail acollins@yorku.ca).

Legal Rights and Signatures (for youth under 16):

I_____, consent for my child to participate in the research study "*Making I-SPARX Fly in Nunavut*" conducted by the LaMarsh Centre for Child and Youth Research at York University.

I have been fully informed of the objectives of the project being conducted. I understand these objectives and consent to my child's participation. I understand that steps will be undertaken to ensure that the information collected will remain anonymous and confidential. I also understand that, if I wish to withdraw my child from the study or if they wish to withdraw themselves, they may do so without any repercussions.

I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

Signature _____ **Date** _____

(Parent/Guardian)

Signature _____ **Date** _____

(Participant)

Signature _____ **Date** _____

(Witness)

Audiotape Consent (if participating in Interviews / Focus Groups)

I _____, give my consent for my child to be audiotaped during discussion about the I-SPARX program. I understand that the purpose of the audio-recording is strictly for this study, and to benefit the evaluation of the current I-SPARX program. My questions have been answered to my satisfaction and I agree for my child to participate in this study. I understand that my child can stop taping at any time.

I _____, give my consent for the listening of my audiotaped interview for the purpose of (please check to indicate consent):

☐ research

Signature _____ **Date** _____

(Parent/Guardian)

Signature _____ **Date** _____

(Participant)

Re-Contact for Future Research Consent

Please check the appropriate box below and print your name:

I _____, give my consent for my child to be contacted in the future for the purpose of (please check to indicate consent):

☐ follow-up to the I-SPARX research study.

Legal Rights and Signatures (for youth over 16):

I_____, consent to participate in the research project "*Making I-SPARX Fly in Nunavut*" conducted by the LaMarsh Centre for Child and Youth Research at York University.

I have been fully informed of the objectives of the project being conducted. I understand these objectives and consent to my participation. I understand that steps will be undertaken to ensure that the information collected will remain anonymous and confidential. I also understand that, if I wish to withdraw from the study, I may do so without any repercussions.

I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

Signature _____ **Date** _____

(Participant)

Signature _____ **Date** _____

(Witness)

Audiotape Consent (if participating in Interviews / Focus Groups)

I _____, give my consent to be audiotaped during discussion about the I-SPARX program. I understand that the purpose of the audio-recording is strictly for this study, and to benefit the evaluation of the current I-SPARX program. My questions have been answered to my satisfaction and I agree to participate in this study. I understand that I can stop taping at any time.

I _____, give my consent for the listening of my audiotaped interview for the purpose of (please check to indicate consent):

☐ research

Signature _____ **Date** _____

(Participant)

Re-Contact for Future Research Consent

Please check the appropriate box below and print your name:

I _____, give my consent to be contacted in the future for the purpose of

(please check to indicate consent):

☐ follow-up to the I-SPARX research study.

Appendix F

Open-ended Questions Directives Given For The Discussions By The Facilitators For Youth In The July 2019 Focus Group Held In Toronto, Ontario

1. What do you think playing the game I-SPARX helps with?
2. After playing the game, what might you feel / think more of?
3. What might you feel / think less of?
4. What other concepts might be related to youth wellness in your community?
5. Do you think the game affects the concepts we have just discussed?
6. How do you think the game would change some of these feelings?
7. How would you talk to your friends about these feelings?
8. How would you try to understand if they were struggling with any of these things?
9. What areas of life are important to look at when thinking about youth wellness?
10. How can we see if people are switching to more adaptive behaviours after playing I-SPARX?

Appendix G

Table G1

Phases of qualitative thematic analysis literature guidelines (Braun & Clarke, 2006)

	Phases	**Description of Analysis Process**
1	Familiarization with data	i) Narrative preparation ii) (Re-)reading data and brainstorming initial ideas
2	Generating initial codes	i) Coding interesting features of the data in a systemic fashion across entire data set ii) Collating data relevant to each potential theme
3	Searching for themes	i) Collating codes into potential themes ii) Gathering all data relevant to each code
4	Reviewing themes	i) Checking if themes work in relation to the coded extracts ii) Checking if themes work in relation to the entire data set iii) Reviewing data to search for additional themes iv) Generating a thematic map of the analysis
5	Defining and naming themes	i) On-going analysis to refine the specifics of each theme and the overall story the analysis tells ii) Generating clear definitions and names for each theme
6	Producing the report	i) Selecting vivid and compelling extract examples ii) Final analysis of selected extracts iii) Relating the analysis back to the research question, objectives and previous literature reviewed