Online Learning as a Social Environment — Toward the Refinement of Practice

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October, 2023

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Introduction

The 2020 publication of *The Distance Learning Playbook* implores us to "never let a crisis go to waste" (Fisher et al., 2020, p. 169). This quote is applicable to the COVID-19 pandemic, a crisis from which we continue to learn. We continue to use lessons-learned during the pandemic to refine practice while moving toward the future and the betterment of teaching and learning. One lesson learned from the pandemic came from the transition to online learning as a strategy for students who, for whatever reason, could not access in-person learning. This transition toward online learning created a myriad of challenges for instructors and students. These challenges included learning about and applying unfamiliar technologies, grappling with a sense of aloneness when social distancing, and adjusting to changes in work-life balance.

We should not view online learning as a temporary solution adopted due to the COVID-19 pandemic, nor should we treat it as something that we will abandon when we transition back to in-person learning. Studies such as Mullen's (2020) *Does modality matter?* suggested that online learning can be *just as* effective as in-person learning. The key element to successful online learning is understanding and mastering the different competencies and foci that are required to successfully and effectively design and deliver an online course.

A History of Learning at a Distance

Before we move into a focus on purely online education, it's useful for us to have an understanding of where we have been. Many teachers have just found their paths (forcibly) intersected with online education due to the shift to online created by the COVID-19 pandemic. Online learning to them may appear to be an entirely new realm and a deviation from 'proper' education that takes place within the classroom. However, education distanced from in-person learning has had a presence within our world for three centuries. The earliest iteration of this form of learning exemplified by a newspaper advertisement from a 'Caleb Phillips' in 1728. This advertisement offered distance education through the United States Postal Service into learning an abbreviated symbolic writing method called 'shorthand'

(Pregowska et al., 2021). Distance education began with 'correspondence education' consisting of sending text via the postal service to students. In 1840, Sir Isaac Pitman in Bath, England, advanced this method by having students send the text back using the post for grading and corrections, thus introducing student feedback (Pregowska et al., 2021).

The movement of time forwards introduced changes and advancements to distance education as institutions grow and technology becomes more sophisticated and accessible. Pregowska et al., (2021) introduces a worldwide flow from the initial correspondence education using the mail, to radio courses. America established the first federally licensed radio station in education under the teaching unit called the University of Wisconsin-Extension in 1906. It began broadcasting in 1907. Others followed suit from the 1920s-1940s, with difficulty from the Great Depression in 1929 that hindered growth. This radio format focused on broadcasting educational materials and college lectures, inclusive of "school broadcasting, teaching adults how to read, covering basic adult education, and conducting social action programming" (Pregowska et al., 2021, p. 6). This idea was not just direct teaching, but "also to [improve] the motivation and mobilization of listeners" (Pregowska et al., 2021, p. 6) and as "a source of news and information that was not easily accessible in printed form, especially in places located away from any libraries" (p. 6).

Naturally, this advancement continued with the introduction of tape cassettes and then television. These new mediums permitted students the opportunity to pick up educational course materials by post or at stores, listen to and repeat the content at different times of the day, and reduce the cost of education (Pregowska et al., 2021). These advancements began in 1963 with the invention of tape cassettes to store audio data on magnetic tape by the Philips company in the form of their Compact Cassettes. Then, furthered in 1979 by Sony's offering of a "portable, miniaturized cassette player—the Walkman" (Pregowska et al., 2021, p. 7). These developments continued in parallel to the development of the television as an educational medium, with 1934 providing the first scientific unit to provide courses by television being the University of Iowa in the United States (Pregowska et al., 2021). In 1952 in America, certain channels underwent reservation

for educational usage. In a Canadian context, a variety of institutions and organizations were established to enable distance learning. Athabasca University (AU) in 1972 focused on higher education in science and the arts, Télé-université in Québec in the same year that was focused on "[offering] university credit and non-credit courses throughout the province" (Pregowska et al., 2021, p. 8), and British Columbia's Open Learning Institute (OLI) in 1978 focusing on delivering "college, basic adult, technical, career, vocational, and university education" (p. 8) education throughout the province.

Floppy disks in 1971 and Compact Disk Read Only Memories (CD-ROMs) in 1984 allowed for printed material, audio, and video to be transferred digitally, continuing this advancement in portable learning technology forwards. Floppy disks and CD-ROMs offered "cheaper production costs, longevity, better audio quality and higher storage capability" (Pregowska et al., 2021, p. 9). It provided an even better format for distance learning, capable of delivering a multitude of materials and formats per disk, offering multimedia content to students. It also provided new avenues to interact with education, such as through "educational games, discoveries, educational movie courses, instructions and exercises" (Pregowska et al., 2021, p. 9). Increased proliferated and affordable personal computers carried these technologies, with the first system to deliver electronic education courses to several connected computers being the University of Illinois' 1960s invention of the Programmed Logic for Automated Teaching Operations (PLATO) (Pregowska et al., 2021).

Carrying us from that period to the present is the advancement of the Internet, the present technology removing the need for physical correspondence or information-laden tapes or disks. The increased usage of computers led to the first working prototype of the Internet in the form of the late 1960s Advanced Research Projects Agency Network (ARPANET). This initial prototype and proof of concept expanded to proprietary and private networks and dial-up and modem access to networks. A breakthrough in the conveyance of networked computing was the beginning of easily accessible and usable browsers for navigating and using networks, such as Mosaic in 1993 (Pregowska et al., 2021). In 1989, the University of Phoenix launched educational programs using one of these private networks –

CompuServe – one of the first online consumer services. The first large American university to "introduce online courses was New York University (NYU) in 1998" (Pregowska et al., 2021, p. 10). Canada preceded this with OntarioLearn in 1995, with adoption of this format by other Universities "Campus Manitoba (1998), BCcampus (2002), and eCampus Alberta (2003)" (Pregowska et al., 2021, p. 11).

In the modern era, a major option for online learning design was that of the Massive Open Online Course (MOOC). Dave Cormier of the University of Prince Edward Island coined the original term when referring to a course called *Connectivism and Connective Knowledge* (Icke, 2017). Researchers have been studying Massive Open Online Courses (MOOCs) for nearly a decade and a half as they represent a different line of design considerations for the delivery of online education. Icke (2017) notes "From 2008-2012 the format steadily grew in popularity", with top universities trying their hand at the creation and use of the MOOC (Coursera, edX). Noted to be different in design and construction between different MOOCs (Quintana & Tan, 2019), we can examine MOOCs in a holistic sense as their own environments founded under the principles of "requiring few (if any) prior qualifications, being free, being offered at a massive scale" (Kotzee, 2021, p. 499) with the advantages of "(1) global reach, (2) low cost, and (3) scalability" (p. 499). They are largely distinct from former classroom teaching moved online by choice or necessity and suffer from their own problems and challenges (Kotzee, 2021; Quintana & Tan, 2019). It is my view that while MOOCs provide an interesting look from a different angle at the delivery of online learning and education, it's important for the prospective researcher to be careful and not draw directly from lessons learned from them and generalize this information to other forms of online learning. MOOCs represent a type of 'offshoot' in some ways, but also a tie in history back to other elements of large-scale offered education, such as educational radio or television.

The re-telling of historical context here should not be seen as exhaustive. The focus of this retelling is a condensed overview and falls into a predominantly North American lens, and aside from this, incredible advancement has occurred all over the world in distance

education—over the course of decades and centuries. All over the world, online education has helped bring education to rural communities, the impoverished, and working adults (Barbour, 2011; Bartley 2004; Mason, 2000). Much of distance education was also driven by women, who lacked opportunities otherwise, this method of education permitting them opportunities in places and times where restrictions existed on them (Pregowska, 2021). In this way, distance education may have been out of sight for many in the past, but provided so much enrichment, value and opportunities to those who took part in it.

Examining the Fabric of Online Learning

Looking backwards from now, the quieter history of online education through computers and networks has stretched back four decades, with the concepts of distance learning itself stretching back three centuries. This time has not only found advancements in technology and growth of institutions and organizations that may offer this mode of learning, but also in research that aims to understand what makes effective distance learning. The future itself could show plenty of additional routes, with Pregowska et al., (2021) noting that a potential continuation of this advancement could take place in the form of "immersive technologies, such as Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR)" (p. 13) to create simulated artificial environments using computers that could be spaces for learning. Research by Taranilla et al., (2022) showcases a singular example of this, showcasing the potential of a virtual recreation of an ancient Roman city to be used in teaching history in Primary Education. Though, for the sake of this research, we'll set aside these exciting and evocative possibilities to look at the present realities.

It is not a problem entirely with online learning to be 'new' and without pre-existing studies and histories, but the problem is compiling pre-existing research into a unified and usable fashion for instructors. In this current world, the COVID-19 pandemic forces us to re-examine online education, many who have never and under an ordinary course, would never have looked to this medium has found themselves on a collision course with it during this crisis. The lessons we aim to understand are in the present, with the means being an examination of the fabric of exactly *what* makes up effective online learning.

My research focuses on the challenges of online learning in the form of classroom teaching moved into an online classroom. My research will contribute to the work of other researchers who build knowledge on theoretically sound online learning and improve upon the practices that form effective online learning. I focused on theoretical methods of understanding an online learning environment as a social environment that may influence students' feelings of loneliness and disconnection that can influence student outcomes (Vargas-Madriz, 2018). Practical applications explored by award-winning online instructors in the context of their own online courses yield valuable insights for the design of online courses (Martin et al., 2019).

My research will result in a theoretical framework of social space online with practical and actionable examples of best practices pertinent to the modern landscape of teaching. The goal of my research is to contribute to the body of knowledge regarding sociable online learning and indicate connections to best practices in online learning. With a greater understanding of social elements within online learning and tangible points of best practices to look to, it is my hope to arm teachers with a little more knowledge that will aid in the design and implementation of their online courses.

Researcher Description

My experience with online learning is as an undergraduate and graduate student. I took ten online courses. I experienced variance in the quality and organisation of online courses. Some classes had clear and concise frameworks and well-laid out structures, and others were comparatively messy and disorganized. This lack of standardization among my experiences has informed my interest in the research topic.

I worked as a Teaching Assistant within two online courses. Participating in discussion boards to foster interaction within the class was a task given to me in both courses. I felt that fostering student interaction enhanced student learning and engagement and the instructors I worked with while functioning as a student teacher held this same belief. This experience led me to reflect on the role of social interaction in online courses,

especially as I noted the discrepancy in the focus on social interaction within the classes I was working in, compared to the classes I attended as a student.

I completed an undergraduate degree in psychology. This background gave me a special focus and interest in human interaction and communication in online environments. The courses I took as part of my degree on the topics of social psychology and anthropology inform my interests in research on the social aspects of online environments. I believe in the potential of an online medium and feel that it isn't used to its full potential - and that full potential is largely poorly understood and needing to be uncovered by further research.

Review of Literature

I present two key areas of literature in this chapter. First, I describe literature on theoretical concepts that relate to Weidlich and Bastiens' (2019) SIPS model. Second, I explore literature on practices of award-winning online instructors. These bodies of literature form the basis of my research.

When selecting these focuses, I held two pieces of important selection criteria in mind:

- To select a theoretical model that focuses on the social aspects of online learning environments.
- To select literature that focuses on the practical design and delivery of online learning.

These two focuses are separate aims of their own, as the intention of this research is to find linkages and connections between theory and practice. To do this, it is important that both theoretical and practical areas are solid and well-founded. Similarly, it's helpful to the research if the theoretical and practical elements decided upon are fairly distinct and stand on their own, increasing the value of confirmed links found across them.

Weidlich and Bastiaen's (2019) SIPS model represents one of the primary focuses of this research as it looks into not only the social elements of an online learning community but also an idea of how these elements might develop. In my experience, online courses often feature a great deficit in terms of social attributes, with peers often feeling more alone and

isolated. Other research validates and supports this experience of isolation and loneliness in online learning. (Hansen-Brown et al., 2022; Lapidot-Lefler, 2022; Savci et al., 2022). Intersecting with my interests as a researcher, the SIPS model permits a study of these social attributes within online learning environments.

An alternative option was Garrison et al.,'s (1999) Community of Inquiry model. This model focuses on the connections and interconnections between three fundamental 'presences': cognitive presence, teaching presence, and social presence. A well known and well-used model in education research, each of these presences relating to a different aspect of a learning environment. In the Lakehead University library database search, "Community of Inquiry" produces 2182 results. The ERIC database search produces 934 results for "Community of Inquiry". Google Scholar produces 32000 results for "Community of Inquiry".

The problem found while considering Garrison et al.,'s (1999) Community of Inquiry model for this research is that this model isn't distinct enough from the later examined best practices, as much research into online learning—inclusive of best practices—uses this model. I saw it as important to make use of a different model to ensure theoretical and practical models have a level of distinction from one another. If I select a theoretical model and the practical aspect that is not strongly connected at some level, it would increase the value of links found across them.

For the practical aspect of this research, I chose to pair the theoretical model chosen with online learning best practices, beginning with research by Martin et al. (2019). Martin et al.,'s (2019) research was valuable in two ways for this research:

- Martin et al.,'s (2019) research grouped different online learning best practices together into distinct categories, making establishing codes and using them easier within this research.
- Martin et al.,'s (2019) research focused on online teachers previously recognized for their online teaching methods by professional associations in the United States, this

lends a level of extra credibility to their status as effective online teachers and thus to the practices they were using in their teaching.

I found best practices to be an interesting element to pair with the theoretical aspect, as it provided that 'practical aspect' that I was looking for. It may be difficult in some cases for educators to use a highly theoretical framework to help guide their design and facilitation of a course, but a list of best practices and effective design decisions may prove to be far more usable and help to counterbalance the theoretical. In the below sections, both the SIPS and best practice elements will be broken down further, explained, and justified. The literature review presented here will establish the fundamental setup and put forth important concepts that will be used throughout this research.

SIPS Model

Notable to my research's theoretical basis is the work of Dr. Joshua Weidlich. Dr. Weidlich's publications showcase their focus on understanding the social elements of online learning environments. Weidlich and Bastiaens' 2017 work introduces their SIPS model, aiming to use it as a framework by which to understand and explain the quality of online learning. Weidlich and Bastiaens' 2019 work then takes this initial concept of the model and aims to see if it can be applied to designing socio-emotional aspects of online learning. Other research aims to hone in on specific social elements to deepen their understanding of them. Examples of these other pieces of research are:

- Refining a description and potential measurement of social presence using most recent understandings into the element (Weidlich et al., 2018).
- Examining the role of personality and perceptions of social presence in online learning environments (Weidlich et al., 2021).
- Understanding a concept of 'ambient awareness' as a mediator that bridges perceived sociability and social presence (Bastiaens & Weidlich, 2022).

Dr. Weidlich's research builds off of earlier research begun by Dr. Karel Kreijns that begins to understand and apply concepts of social elements to online learning environments (Kreijns et al., 2013; Kreijns et al., 2007; Kreijns, 2004). Work by Dr. Weidlich in this area is

ongoing and constitutes a cutting edge and developing an understanding of the social elements of an online learning environment, while also building on the work of previous scholars and expanding that work. I chose Dr. Weidlich and their work as a focus due to it representing a unique and alternative understanding of social online learning environments. This alternative understanding remains backed by the work of previous scholars, permitting an alternate, valid line of explanation then frameworks more commonly chosen within the field of Education and specifically online learning such as the popular Community of Inquiry model that also includes social presence (Garrison et al., 1999).

Weidlich and Bastiaens (2019, 2017) proposed the SIPS model (*Sociability*, *Social Interaction*, *Social Presence*, *Social Space*) by adapting past work by Kreijins et al. (2013) as a means of understanding "under which conditions social presence is facilitated" (Weidlich & Bastiaens, 2019, pp. 1-2). Social presence is seen as "an essential factor in online learning" (p. 1) as it explains "how students interact through and relate to others in computer-mediated communication (CMC)" (p. 1).

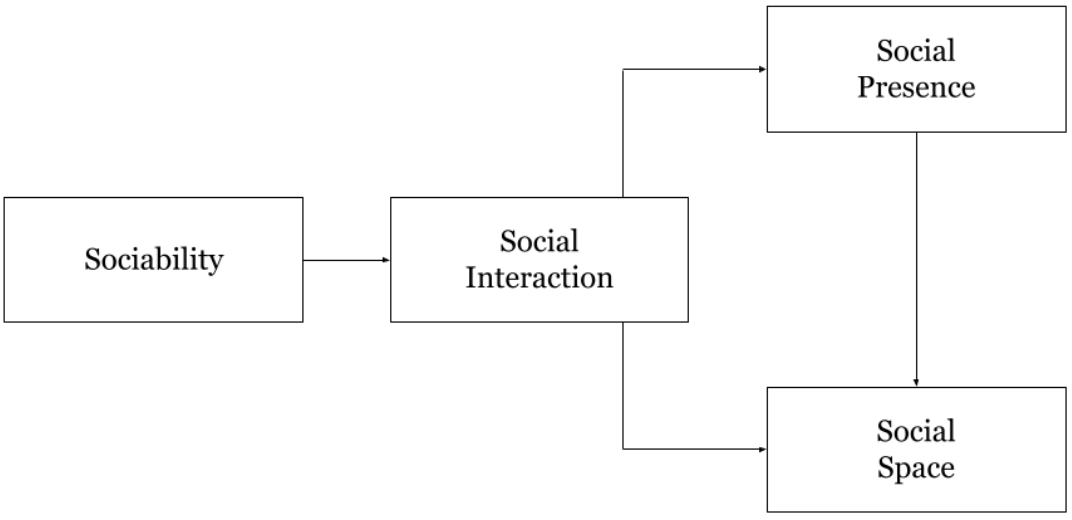

Fig. 1. The SIPS model by Weidlich & Bastiaens (2019).

The SIPS model follows a pathway that begins at *sociability*, which posits that "certain environmental characters are essential to making a learning environment sociable" (Weidlich & Bastiaens, 2019, p. 2) and thus containing the affordances that render it able to

support the next step — *social interaction*. Defined as "the process of communicating and exchanging messages with peers in the learning environment" (Weidlich & Bastiaens, 2019, p. 3), social interaction forms the method and means by which students may detect *social presence* and the perception of a sound *social space* (Weidlich & Bastiaens, 2019).

Both social presence and social space are the end-goals of this model. Social presence helps students to perceive others as salient, present, and even 'real' within a virtual environment (Weidlich & Bastiaens, 2019). Social presence increases engagement and connectedness to the online learning environment and social space. Weidlich and Bastiaens (2019) define a social space as "a network of interpersonal/social relationships between [people] in the learning environment" (p. 3). Social presence is a type of individual understanding or perception of connections with other people in a virtual environment, while a social space is the perception of a greater network of relationships and connections within a space that encompasses the perception of other relationships and connections that lend strength to the space itself. For example, social presence could be part of a one-on-one conversation where the communicators feel each other are 'real' and 'salient', through sharing more about their personal selves. The social space in this example could be viewing a discussion board where others are undertaking deep and meaningful communications as lively discussions with one another, showcasing a greater network of relationships and connections. I describe each part of the SIPS model in more detail below.

Sociability

Sociability within the SIPS model is seen as "an attribute of the learning environment, as perceived by the students" (Weidlich & Bastiaens, 2019, p. 3) of this environment containing "tangible elements that allow for an facilitate quick, easy, and informal social interaction, especially in the socio-emotional dimensions" (p. 3). "Aloof" (Weidlich & Bastiaens, 2019, p. 3) is the term used to describe environments that lack these elements and attributes.

Researchers highlighted the need and importance of sociability. Research by Savci et al. (2022) found that lower levels of sociability, when paired with individuals that have low

social intelligence, are predictors of loneliness in their sample of undergraduate nursing students. Research conducted by Vrieling-Teunter el al. (2022) found that the sociability of a learning environment was an essential component of the first step of self-regulated learning skills and planning. Their findings indicated that if students did not have an initial sense for the sociability of the learning environment, they would turn their attention to different routes for communication which would impact their own engagement with the environment (Vrieling-Teunter el al., 2022).

Sociability is the first step within the SIPS model for the formation of a social environment (Weidlich & Bastiaens, 2019). Learner perceptions of the ability of an online learning environment to support social interaction precede the creation of a social environment and have an impact on learning outcomes. If students perceive are that the online learning environment does not support social interaction, students will take alternate pathways to satisfy a need for communication, or may experience feelings of loneliness that may negatively impact their satisfaction and outcomes in that online learning environment (Savci et al., 2022; Vrieling-Teunter el al., 2022).

Social Interaction

As part of the SIPS model, the focus of social interaction or "student-student interaction" (Weidlich & Bastiaens, 2019, p. 3) is the interaction between students in a learning environment. The act of "communicating and exchanging messages" (p. 3) characterizes social interaction. Suggested by Weidlich and Bastiaens (2019), "sociable learning environments facilitate an increase in spontaneous yet sustained social interaction" (p. 3). The presence of social interaction itself leads to the perception of the "social presence of their peers" (p. 3), as well as the perception of "the learning environment to be a sound social space" (p. 3).

Social interaction is the middle-step within the SIPS model that connects a student's perception of an environment as able to contain social elements, to an individual's perception of themselves as being surrounded by these social elements. Social interaction is an active step, an emergence of communication which can then develop from simple

messages and communication into a social environment that contains both social presence and constitutes a social space (Weidlich & Bastiaens, 2019).

Alongside the importance of student-student interaction, research inclusive of both student-student and instructor-student interaction shows positive experiences for the students. Lagat & Concepcion (2022) significantly correlated social interaction between both students and instructors with perceptions of student learning. The quality of social interaction that includes both instructors and students positively correlates with an individual's perceptions of their ability to undertake self-directed learning (Lasfeto & Ulfa, 2022). Interaction between students and instructors increases a student's learning as well as improves their ability to learn in a self-directed manner.

The presence of social interaction in an online learning environment assists in mitigating negative influences on online learning. Social interaction's absence "has a positive influence on the barriers to effective learning" (Baber, 2022, p. 165). Research on team-formation among graduate students during a forced transition from face-to-face to online learning found that teams adopting practices that fostered social interaction help mitigate the negative effects of the transition that impacted a team's social environment (Sjølie et al., 2022).

In light of this information, we can envision social interaction's 'middle step' as an element that helps improve positive outcomes for students, while also moderating or mitigating negative effects on students.

Social Presence

Social presence is a well-studied concept even outside of the SIPS model. Within the SIPS model, social presence is "the psychological phenomenon that the other is perceived as 'real' in the communication, the subjective feeling of being with other salient social actors in a technologically mediated space" (Weidlich & Bastiaens, 2019, p. 2). This definition is important for the present research as other pieces of literature into social presence can often use "a plethora of different definitions" (Weidlich & Bastiaens, 2019, p. 2) and thus different "operationalizations of social presence" (p. 2).

Due to the well-researched nature of social presence, there is a large amount of evidence for not only its effects on online learning but also practical suggestions toward the enhancement of social presence itself. Social presence has a strong effect on student learning achievement and satisfaction (Zhan & Mei, 2013). Social presence has positive effects on fostering "trust, communication, collaboration, and performance improvement" (Bickle et al., 2019, p. 385), social presence in online classes aids in "[easing] feelings of disconnection, isolation, and separation" (Phirangee & Malec, 2017, p. 161), and social presence increases the quality of learning in online environments (Weidlich & Bastiaens, 2017). Conversely, a lack of social presence hinders online learning in areas such as student retention and engagement (Bowers & Kumar, 2015).

An online learning environment is persistently different from an in-person classroom environment, where different types of students may better form social presence, connect with each other, and thrive within this environment. Research from Weidlich et al. (2021) exemplifies this, showcasing that "introverted users may be relatively more likely to satisfy their social needs in online environments" (p. 197). This is a divergence from the norm of extroverted and highly social individuals that often benefit from the face-to-face interactions of in-person learning. These introverted and less social individuals are more able to experience social presence in an online environment than others (Weidlich et al., 2021).

There are methods to foster or enhance social presence. Work done by Ritonga et al. (2022) suggested that the use of language and communication fosters social presence. Specifically, positive messages, motivating content, empowering feedback, and personal touches improve a student's perception of social presence. Bentley et al. (2015) suggested that relinquishing formal language that distances oneself from others will enhance social presence. For example, a suggestion is to use "paralanguage",

> the expression of emotion, humor, and self-disclosure as seen in the use of "paralanguage" such as emoticons, exaggerated punctuations, unique spellings; the explicit use of feeling words such as love, furious, anxious, perplexed; the expression of

> values, beliefs, and attitudes; teasing, cajoling, or understatement; or any expression of vulnerability or risk taking. (Bentley et al., 2015, pp. 499-500)

Different tools in a virtual learning environment can aid in the forming and strengthening of social presence. Research by Kear et al. (2014) noted that some students experienced increased social presence and perceived feelings of connection as they filled out their social profiles on online learning platforms. Research by Akcaoglu & Lee (2018) suggested that the use of social networking sites that students are familiar with can serve as a back-channel for enhancing social presence in online learning.

The amount of time needed to establish social presence varies. Research by Castro (2019) found that it is feasible to manifest a perception of social presence in as short a period as twenty to forty-five minutes for online conference presentations. Research by Bastiaens & Weidlich (2022) suggested that social presence may develop from the 'mere presence' of being within a sociable learning environment, without direct social interaction involved. These additions to the understanding of social presence as a concept add to what we know and complicate it. Since social presence can emerge rapidly and without direct social interaction, it challenges us to understand that there are even more ways in which social presence may emerge and more unexplored elements of social presence as a concept.

Social Space

In the SIPS model, social space is "a network of interpersonal/social relationships between [the student] and others in the learning environment" (Weidlich & Bastiaens, 2019, p. 3). Weidlich and Bastiaens (2019) identify that social space is "often conflated with social presence". This can make examining some pieces of prior research challenging, as researchers may mix together concepts of social presence and social space. Drawing a distinction between social presence and social space, Weidlich and Bastiaens indicated that as "social interaction takes place, students demonstrate communicative behaviour that is indicative of a sound social space" (Weidlich & Bastiaens, 2019, p. 3). Social interaction is the means by which social presence comes to be formed, but a social space is a greater

perception of the community itself as having a greater network of social interconnections outside of the individual's perception of social presence.

Identified by Vrieling-Teunter et al. (2022), the soundness of a social space "will be characterized by attributes like a sense of community, positive group climate, mutual trust, social identity, and group cohesion" (p. 2). Alenezi (2022) identified these attributes as having a strong relationship with student satisfaction, especially when paired with a strong underlying influence from sociability, social interaction, and social presence.

Within the SIPS model, social space is the final outcome. The creation of a social space occurs once the other elements of the model are present in an online learning environment, together with the formation of sufficient social interaction and social presence. As an example, an individual may perceive a social network they are part of as a sound social space if they can see different users communicating with each other (social interaction), and feel a sufficient sense that those around them are real people (social presence).

Best Practices for Online Learning

Many scholars contributed to our current understanding of sociability, social interaction, social presence and social space in online learning in terms of theory. At the same time, there is a need to share best practices for online teaching and learning to refine practice. For this research, I summarized literature on different aspects of what constitutes the 'best practices' of an online course. The literature examined used the phrase 'best practices' and this phrase continues to be used within this research.

Integral to the understanding of the best practices of online learning within this research is the work by Dr. Florence Martin. Dr. Martin's publications reflect their focus on the design and delivery of effective online learning, with work that aims to understand and break down the 'why' behind effective online learning. This work continues to the present, inclusive of:

- A systematic review of research into collaboration technologies, design techniques, facilitation strategies and outcomes in online learning (Oyarzun & Martin, 2023).

- A second systematic review looking at research from 2000 to 2019 regarding K12 online teaching and learning (Martin et al., 2023a).
- Award-winning online instructors and their strategies into an effective blending of asynchronous and synchronous online learning modalities (Martin et al., 2023b).

Due to the breaking down and categorization of effective online teaching elements, Dr. Martin's work is highly usable as a starting point in examining best practices, their categorization of these practices able to be expanded, verified, and validated by works of other authors. Furthermore, in Martin et al., (2019), the usage of award-winning teachers allows a level of objectivity to the sometimes subjective view of 'what makes effective teaching'. This objectivity helps to lend strength to the framework established by their observations, leaning away from as much conjecture and presuppositions of effective teaching as possible.

I focused on best practices through the lens of research by Martin et al. (2019). Martin et al. (2019) interviewed award winning online teachers and synthesized a list of best practices from the data they collected. In their research, they selected eight award-winning online faculty members from different areas of the United States. A professional association recognized each faculty member with an award for their online teaching. They conducted semi-structured interviews with these faculty members in an open-ended format. The responses to these interviews yielded a list of best practices grouped into four categories; the design, assessment, evaluation, and facilitation of online courses (Martin et al., 2019). Martin et al. (2019) grouped assessment and evaluation into one dimension, but I separated them for the purposes of this research. In the following sections, we will examine the elements that make up these categories.

Design

Martin et al. (2019) identified five subtopics for the design of effective online learning. These were: a systematic approach to the design of content, the integration of backward design, the organisation of the course, meeting the needs of the students, and intentionally building for student interaction (Martin et al., 2019).

The first subtopic for designing online learning proposed by Martin et al. (2019) is a systematic approach to content design. For this subtopic, faculty began "with the course description and objectives, and drafted a syllabus before working on the online course" (Martin et al., 2019, p. 38). In this fashion, they aimed to identify the core of the course and objectives before working on what they needed to achieve the goals and objectives of the course. Lee (2021) identified a method to strengthen this strategy by transitioning from the planning phase directly into identifying tools and technologies to achieve learning goals and objectives. Other research supports this idea, suggesting that an online instructor should use online-focused strategies to harness the strength of the medium and take advantage of it (Acevedo, 2020), while combining an understanding of the pedagogy of online learning with learning technology that adds to the course (Carrillo & Flores, 2020).

The second subtopic for designing online learning proposed by Martin et al. (2019) is backward design. Martin et al. (2019) described backward design as "[designing] learning activities based on the type of learning outcomes [the instructor] aimed for in their course design" (p. 38). Martin et al. (2019) identified that interviewed faculty members used the term "'alignment' to explain how they ensured that the syllabus, learning outcomes, assignments, learning activities and learning technologies were aligned within the course" (p. 38). Backward design is the designing of a course, starting from the outcomes and selecting and aligning content towards those outcomes. Wasfy et al. (2021) advocated for aligned and cascaded goals, in a very similar concept, pointing the design back to the predetermined intentions and objectives of the course. A scaffolded approach assisted with the cascaded goals, breaking steps down through a series of phases to reinforce the course content and its delivery (Davey et al., 2019). The use of backwards planning strategies when setting up and designing the course assisted in its delivery. Tanis (2020) identified that online teaching is very focus-intensive and that faculty must be "consistently attentive" (p. 19). Timesaving tools and practices are of paramount importance (O'Doherty et al., 2018) as are smaller practices such as blueprinting and planning out communication schedules ahead of time for the class (Hicks et al., 2019).

The third subtopic for designing online learning proposed by Martin et al. (2019) is course organisation. In course organisation, Martin et al. (2019) identified "chunking" (p. 38) as a strategy used by award-winning online teachers that entails breaking down a course into smaller subsections. This included clearly laying out objectives and core competencies (Wasfy et al., 2021), consistent formatting within the online learning module, using figures, audio/visual lecture resources, activities embedded in the module, organising each component part of the online learning module to form a lesson that clearly relates back to the stated learning objectives, purposefully choosing and simplifying the length and content of text, activities, figures and audio/visual resources (Cobb et al., 2018). Organisational strategies can prevent students from being lost, overwhelmed, or uncertain of steps and tasks, aiding both instructors and learners (Martin et al., 2019).

The fourth subtopic for designing online learning proposed by Martin et al. (2019) is meeting the needs of students. We can break down this concept of meeting student needs into two parts, supporting active learning and using a variety of instruction methods (Martin et al., 2019). Active learning are "approaches [that] include student activities or discussion in class, whereas passive-learning approaches emphasize extensive exposition by the instructor" (Nguyen et al., 2021, p. 2). Online learning favours active learning, while in-person learning favours passive learning styles (Nguyen et al., 2021). Both alumni and faculty preferred active learning (Tanis, 2020) as it improves student engagement and involves deeper understanding of the lessons (Camacho & Legare, 2021). With the preference and familiarity of many students and instructors with passive learning due to the high amount of exposure and familiarity to it, Schultz and DeMers (2020) advocate that "attitudes must be adjusted by both learner and instructor" with the learner needing to "be gradually introduced to an active, collaborative, and supportive learning community composed of both fellow students and instructor(s)" (p. 145). Variable instruction methods can be used to meet the varied needs of diverse students (Wasfy et al., 2021; Acevedo, 2020). Diverse learning modalities are associated with student affect and engagement (Nguyen et al., 2021, p. 6). The use of varied learning techniques and strategies acknowledges and supports the diversity of

the learner's talents and individual learning styles (Acevedo, 2020). Camacho and Legare (2021) support this notion by positing that "personalising instruction and focusing on the skill set of each student may lend to increased student engagement and retention" (p. 5).

Lastly, the fifth subtopic for designing online learning proposed by Martin et al. (2019) is designing for student interaction. Active learning links to designing for student interaction within the online learning environment, as well as assists the instructor in facilitation of the online learning environment (Carrillo & Flores, 2020; Martin et al., 2019). Researchers identified other strategies that assist in designing for student interaction:

- Use multiple modalities to interact with students, including audio, video and text (Tanis, 2020).
- Use discussion boards and intentionally design activities using them to involve students interacting with other students (Camacho & Legare, 2021).
- Advocate that students complete personal profiles on the online learning platform to show more of themselves to their fellow students (Greenhow & Galvin, 2020).
- Helping students understand how to plan to and meaningfully engage and collaborate with their peers (Greenhow & Galvin, 2020).

Designing for student interaction is a step that purposefully blends two essential online instructor competencies — communication skills and technological competence (Roddy et al., 2017).

Assessment

Martin et al. (2019) identified consistent assessment practices among award-winning online instructors. These included a variety of course assessments, the use of traditional and authentic assessments, and the use of rubrics (Martin et al., 2019). Wasfy et al. (2021) added that communication and feedback should be an integral part of assessment.

The use of traditional and authentic assessments is the second part of Martin et al.'s (2019) research findings. Award-winning online instructors used a variety of traditional assessments — quizzes, discussion forums, tests, exams. These are well-understood and conventional approaches to assessment that many students are familiar with. Beyond these

traditional assessments, Martin et al. (2019) places focus on designing authentic assessments that use a student's own creative or research skills in the form of research articles where they choose the topic, or in assignments where they create presentations, reflections, or portfolio-based content. This variety of assessments of both a traditional and authentic type permits for assessment of learning outcomes in a multifaceted manner, but also a level of fairness involved as certain students may be more comfortable with some than others. (Krebs et al., 2021; Wasfy et al., 2021).

The third part of Martin et al.'s (2019) best practices for assessment were rubrics. For grading purposes, Tanis (2020) identified that rubrics, exemplars, and templates assist students' completion of assignments.. Also, real-world examples in assessments assist in bridging the gap between theory and practice, making the topic and its importance accessible for a learner (Acevedo, 2020). Rubrics are important "for all types of assignments, but also to be used to evaluate if the course and program outcomes are met" (Martin et al., 2019, p. 41). Rubrics assist by "saving grading time, conveying effective feedback, and promoting student learning" (Martin et al., 2019, p. 41).

Lastly, frequent feedback and transparent reporting are best practices for assessment (Wasfy et al., 2021; Cobb et al., 2018). Foster et al. (2018) offer recommendations for the use of language within this feedback, such as using less formal language, not focusing only on technical details of a student's submission such as flawless adherence to APA styling, using a student's name when posting to them or offering feedback, offering more positive feedback for each point of negative feedback, granting examples that assist with explanation or direction, evaluating students through a lens of a mentor, guide and supporter (Foster et al., 2018). These tips and pieces of advice aimed to assist in bridging a gap between student and instructor within an online learning environment.

Evaluation

Martin et al. (2019) identified best evaluation practices used by award-winning online instructors, "both in terms of course design and teaching" (p. 41). Evaluation involves a

quality assurance process, as well as offering opportunities for student and colleague feedback (Martin et al., 2019).

Regarding quality assurance, Martin et al. (2019) suggested using teams of professionals at the instructor's institution with specialties in different areas that can assess and examine the course or module and offer suggestions and improvements. The instructor should continuously evaluate and monitor the course or module over its duration and document the evaluation for review by these professionals. Additionally, external reviewers should undertake a periodic evaluation of these courses or modules, and data-driven decisions should help inform improvement (Wasfy et al., 2021).

Regarding student and peer feedback, Martin et al. (2019) showed "mid-semester and end-semester surveys, student evaluations that focused on both course design and facilitation, and the use of data collected from learning management systems that are used to supplement student evaluations at their universities" (p. 41) as techniques used by award-winning online teachers. The surveys specifically called upon the student's knowledge and experiences within the course to assist in honing it, permitting the opportunity to "adaptively improve our courses" (Acevedo, 2020, p. 12461) based on this feedback, which is important for improving online learning (Foster et al., 2018).

Facilitation

The facilitation of an online course is different from in-person learning in terms of strategies and methods. As stated by Schultz and DeMers (2020), it is important to alter one's conceptualization of teaching, such that

> The educator, accustomed to the adulation of being "on stage" as the subject matter expert, needs to release that power structure in favor of moving into the background and permitting the learner to take charge of their access to content. (Schultz & DeMers, 2020, p. 145)

They suggested that the educator works in the background and uses their expertise to "monitor discussions, provide ample and rapid feedback, and reward argument, critical thinking, and creativity to the learner online" (Schultz & DeMers, 2020, p. 145), which aims

to “[provide] the learner with a methodology to systematically analyze conflicting content critically and objectively” (p. 145). The goal was to build the students up, have them be the crucial element of the learning environment as the instructor helps guide and assist them with their learning. The skills used in this facilitation were different and distinct from in-person teaching, with the potential for an online course to be time-consuming because of the attention and presence of an instructor must exude, while also being in the background to let the students shine (Tanis, 2020).

Martin et al. (2019) organized the facilitation of an online learning environment into three separate parts: timely response and feedback, availability and presence, and periodic communication. Student learning and engagement ties into timely response and feedback in that “instructors' timely response to questions and timely feedback on assignments were facilitation strategies that help students in online courses to enhance instructor presence, instructor connection, learning and engagement” (Martin et al., 2019, p. 41). The ability to give timely feedback and responses to students was associated with essential skills for an online educator (Gui et al., 2021), and assisted in a student’s connection to the class itself and positive learning outcomes through enhancing perceived support and presence (Mullen, 2020).

Availability and presence may be direct or indirect. Directly engaging with students can “lessen the psychological distance of communicators online and can simultaneously improve instructional satisfaction and reported learning” (Nguyen et al., 2021, p. 7), and “award-winning faculty stressed the importance of being present and available to their students” (Martin et al., 2019, p. 41) through, for example, using materials which made strong use of the instructor’s voice and video to augment and improve presence (Martin et al., 2019). This, alongside the recommendation for instructors’ working to actively model the use of technologies within the course, explain the structure of assignments and their components and give encouragement that assists in guiding the students, much like using exemplars and templates to align student’s thinking (Greenhow & Galvin, 2020; Mullen, 2020). The indirect presence of an instructor and their availability has effects on the

community itself. Indirect presence establishes a level of community while bridging the gap of distance between students and instructor, creating a “sense of belongingness” (Roddy et al., 2017, p. 7) that assists in supporting student success within an online learning environment (Acevedo, 2020; Vargas-Madriz, 2018).

Lastly, facilitation of periodic communication was seen as a priority, as “the instructor sending/posting regular announcements or email reminders was a communication strategy that was rated very high by the students as important for their learning” (Martin et al., 2019, p. 41). Students benefited greatly from communication to assist in their learning, and even simple methods such as the summarising of key and critical points of the lesson into take-home messages can be a vital tool (Cobb et al., 2018). Camacho and Legare (2021) noted instructors should ensure “that outreach and connection messages are sent throughout the duration of the course directly to students to make an online connection, share instructions or coursework details or for retention outreach” (p. 5). This communication aids in building trust in the instructor, which influences students’ commitment to learning (Flavian, 2019). Hicks et al. (2019) advocated that instructors work to improve their communication skills through emails and other online methods, while Foster et al. (2018) offered a practical series of tips involving the usage of language and communication. These tips included using emoticons, images and videos, the improvement of non-verbal communication skills, a focus on genuineness in communication, a level of acceptance and benefit of the doubt extended to online students, periodic emails to individual students to improve learner-instructor connection, the use of warm and inviting language instead of commanding and authoritative, and working on fostering a relationship and rapport with students (Foster et al., 2018).

Present Research

In this research, I will assess the inter-relations between the theoretical and practical realms of online learning in an effort to bridge the gap between theory and practice. To guide this idea, an adapted version of Weidlich and Bastiaens (2019) SIPS model — where the best practices link to the SIPS model (see Fig. 2) — was used to guide data collection and analysis.

The intention adapted of this model is to take advantage of the pre-existing 'flow' of Weidlich and Bastiens' (2019) SIPS model, in how its individual constructs connect together. The connection of constructs is not only correlation, but implies causation in their directional relationships. Using these relationships, we can add in best practice elements, combining the two constructs together and then aiming to test if this combined construct is valid.

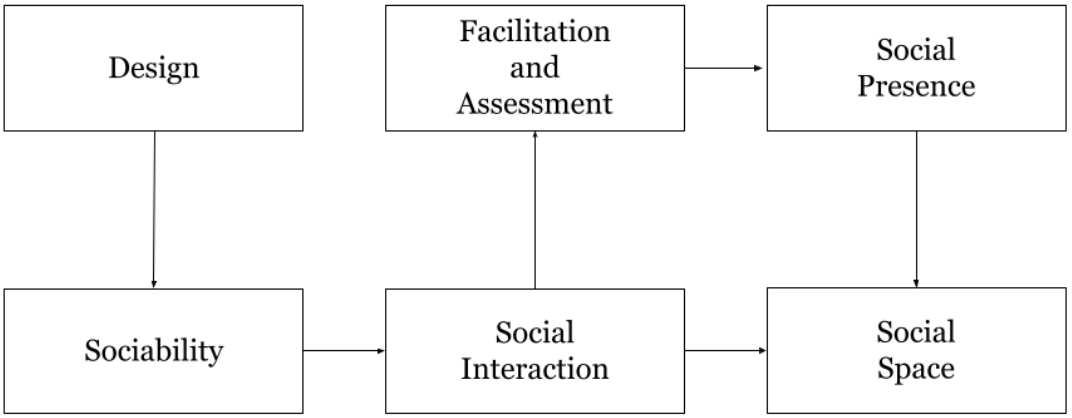

Fig. 2. The SIPS model (Weidlich & Bastiaens, 2019) adapted for this research.

Using directional relationships illustrated via arrows on the model, this model posits that course design best practices will influence the emergence of sociability, while social interaction conveys itself through both facilitation and assessment, permitting its transference into students' perceptions of social presence. Below, we explain our rationale for why these constructs are linked directionally.

The connection of design with sociability relates to the fundamental idea that "online learning environments may differ in their ability to facilitate social interaction" (Weidlich & Bastiaens, 2019, p. 3), and these differences relate to the presence of "tangible elements that allow for and facilitate quick, easy, and informal social interaction" (p. 3). A conceptual key idea for the design of sociability into an online learning environment may be effective design-for-interaction itself. By designing the course with proper social characteristics in mind from the beginning, sociability may emerge as a natural outcome, as design influences the fundamental affordances of the course. This explains the addition of "Design" to this part of the SIPS model.

The second concept of social presence's emergence relies on the facilitation and assessment undertaken by the instructor within the online learning environment. Messages that are exchanged within a virtual learning environment constitute social interaction, and can be part of the establishment of feelings of social presence within the environment (Carrillo & Flores; Weidlich & Bastiaens, 2019; Vargas-Madriz, 2018). This explains the addition of "Facilitation" and "Assessment" to this part of the SIPS model.

Research questions are:

RQ1 In terms of student perceptions, how well do certain online classes at Lakehead University bear attributes of an effective social environment as dictated by the SIPS model (Weidlich & Bastiaens, 2019), while also adhering to the concepts of an effective online course as identified by Martin et al. (2019)?

H1 Due to the interrelation of both student satisfaction and positive learning outcomes observed by both the undertaking of online learning effective practices (Mullen, 2020, van Rensburg, 2018) and the formation of a social environment that adheres with the SIPS model (Bickle et al., 2019, Akcaoglu & Lee, 2018), students that identify an online class as bearing the attributes of an effective social environment will also adhere strongly to the concepts of an effective online course. The second research question is then as follows:

RQ2 Within a class specifically mentioned to be effective by surveyed students, which elements of effective course design, assessment, evaluation, and facilitation as identified by Martin et al. (2019) can be seen within the learning environment? How do these elements contribute to the formation of an effective social environment?

H2 The adapted model (see Fig. 2) will explain how and what elements will be prevalent, and how these elements will lead into the establishment of an effective social environment. Elements of design will have a positive correlation with perceived sociability, while facilitation and assessment will have a positive correlation with social presence.

I made assumptions as part of these questions. One of these is the note that research into the SIPS model functions largely from the concept that SIPS model elements require interviews and feedback to isolate their existence. SIPS model components relate to

perceptions of participants in an online environment and thus are subjective (Weidlich & Bastiaens, 2019). A second assumption is that best practices explored within this research do not suffer from this first assumption – they are able to be located qualitatively through document analysis as well as quantitatively through surveying. These assumptions inform the design of the above questions.

The first question serves as an 'establishing' question. It aims to ascertain if classes at Lakehead University even bear the social elements of SIPS and best practice components that are outlined within my research. It is in my experience that courses at Lakehead University do bear these social elements. Despite this, courses do not frequently capitalize on or use these social elements. However, for this research, it is important to test this idea. There could be a case where students vote for an 'effective online class' because it is a quiet, solitary work environment where they can focus without the distraction of others, while they potentially meet their social needs elsewhere. Other research has noted alternative pathways to social presence generation, students as able to potentially meet their social needs elsewhere, as well as personality types that engage with social presence differently (Bastiaens & Weidlich, 2022; Weidlich et al., 2021; Greenhow & Galvin, 2020; Akcaoglu & Lee, 2018).

The first question will similarly serve as an initial exploration and foray into these elements, while the second question will serve to be a deeper level examination of the interplay between SIPS and best practice elements. In the first question, we will come to understand the presence of social elements within online classes and how they relate to the theoretical aspects. Now, into the second question, we'll focus on providing explanations and descriptions of the online learning environments examined after being named by students. We'll attempt to explain their choices, identify elements that line up with what we understand of best practices and the SIPS model, and how these elements tie together.

Research Context

Lakehead University is a medium-sized university situated in the Province of Ontario, Canada with around nine thousand students (Lakehead University, 2023c). Lakehead University has two campuses, one in the city of Thunder Bay, and the second campus within

the city of Orillia, near to the Province of Ontario's capital city of Toronto. The Thunder Bay campus of Lakehead University has about 7500 students, while the Orillia campus has about 1500 students (Lakehead University, 2023a). Due to this split, Lakehead University maintained a degree of online learning to cater to students across both campuses, while also including technologies and accommodations such as telepresence classrooms which allow students from both campuses to take the same in-person class through a projector system projecting in real time the students of the linked classroom into the other in the other campus (Lakehead University, 2023b). This focus on connection and online presence likely gave Lakehead University a small degree of edge over other universities and colleges that focused more heavily on a singular campus and in-class studies during the COVID-19 pandemic. Even with this advantage, the transition was not seamless nor easy, as it was not either of these things virtually anywhere.

In terms of online learning, Lakehead University uses a learning management system called myCourselink, also known as Brightspace, by the company Desire2Learn (Lakehead University, 2023d). As defined by Ashrafi et al., (2022) a "[learning management system] is known as an informational system that facilitates e-learning through processing, storing and disseminating educational material" (p. 1475) and that a learning management system is "also used to support the administration and related communication of learning contexts" (p. 1475). I will refer to this learning management system as Brightspace throughout this research, though commonly it is colloquially called 'D2L' by students and instructors as this is an abbreviated version of the company name that appears in the URL when accessing it.

Brightspace is used heavily within the landscape of e-learning at Lakehead University. It is a largely self-contained web tool that allows instructors to convey their online class to students, including areas for assignment submission, grading, quizzes, course content, discussion boards and more. Lakehead University primarily provides classes through Brightspace. In my experience, teachers focus their content and design on this Brightspace classroom, though they may offer links to supplemental content and readings outside of it but rarely do they make use of other central methods of content delivery, such as

a course website. I have observed that the central reliance on Brightspace as the method of course delivery is the strongest within asynchronous courses at Lakehead University. Synchronous courses, on the other hand, frequently use the Zoom video conferencing tool as an alternate mode of delivery, whereas asynchronous courses rely almost entirely on Brightspace and its built-in functionality.

Method

A sequential explanatory mixed-methods design was the methodology for this research (Ivankova et al., 2006). An initial "[collection] and analysis of quantitative (numeric) data" (Ivankova et al., 2006, p. 5) followed by "qualitative (text) data collected and analyzed second in the sequence" (p. 5) characterizes a sequential explanatory mixed-methods design. The two-phase design intends for "The second, qualitative, phase [to build] on the first, quantitative, phase, and the two phases [connect] in the intermediate stage in the study" (Ivankova et al., 2006, p. 5). The purpose of the quantitative data and its analysis is to provide a general understanding of the research problem, while the qualitative data and its analysis aims to refine and explain the results with a deeper exploration (Ivankova et al., 2006).

The selection of the sequential explanatory mixed-methods design for this research allowed for the possibility of unexpected results within the initial quantitative survey. The understanding of best practices in online learning in use at Lakehead University has not been studied, nor has there been an analysis at Lakehead University of its online classes through the lens of the SIPS model. The initial quantitative stage was used to describe best practices for online learning and explore their relation to the adapted SIPS model in Figure 2. The subsequent qualitative phase allowed for a deeper exploration of the qualities of outstanding online classes to help understand the initial results and to form a more comprehensive understanding of effective online learning.

I selected a descriptive focus for the quantitative approach of this research. A 10-item survey was used to gather data about student perceptions related to the adapted theoretical model in Figure 2. We asked students to identify a course they felt was effective before

answering questions about it. Therefore, the results do not represent typical courses, but rather the courses for which students had a memorable positive experience. In addition to descriptive statistics for survey responses, an analysis of correlations between elements of best practice and SIPS model components was conducted to gain an understanding of their interrelatedness.

I chose to use qualitative case studies for this research's qualitative approach. This type of approach is "an in-depth description and analysis of a bounded case" (Merriam & Tisdell, 2016, p. 37). Merriam and Tisdell (2016) identify that a case study focuses on a unit of analysis that is bounded in its nature. One individual, one particular program, or one classroom would be examples of applicable cases (Merriam & Tisdell, 2016). The cases selected within this research are two online classes revealed in the initial quantitative approach as effective course experiences as perceived by students. I collected data via document analysis related to two online classes that were identified by students to be positive experiences. I examined these classes for tangible examples of the elements of an effective online course, alongside evidence of proof of the online course functioning as a social environment that adheres to the SIPS model of Weidlich and Bastiaens (2019).

My research explores online courses from the perspective of best practices and SIPS, representing an untapped area of study. I collected varied data to construct practical and theoretical understandings of the topic, as well as provide potential explanations. McKim (2015) criticized both qualitative and quantitative methods when used alone for containing weaknesses. Qualitative research for "lacking things such as objectivity and generalizability" (McKim, 2015, p. 213), and quantitative research for "lacking participants' voice and a meaningful interpretation" (p. 213). By taking together qualitative and quantitative data to examine a specific subset and specific cases, we may find more valuable information.

The exploration to come heavily ties into the examination of previous literature. This literature forms much of the basis of what constitutes 'key concepts' and understandings within this research. For example, the best practices examined previously then go on to become the lens through which we categorize and see best practices. As a tighter example,

the argumentation by Tanis (2020) and Martin et al., (2019) regarding the importance of rubric use in best practices under assessment I recognize as an important element within this research, and ties into part of what we search for when we begin our exploration. As such, this research relies on a degree of presupposition regarding what is seen as important, counterbalanced by a consensus offered by a variety of authors. This is most apparent within best practices, as that is an area subject to considerable debate, conjecture, and opinion. To mitigate the subjectivity, I used Martin et al. (2019) as a guiding organizer for best practices, other research serving to add to and augment this. Within the SIPS model, this problem is not as apparent as the model itself has a smaller subject body of research and tighter definitions and criteria for what constitutes it.

Participants and Other Data Sources

Quantitative Data Source — Online Survey Participants

Students in Lakehead University's two-year professional Bachelor of Education program were eligible to participate in the study, $N = 748$ (G. Pluim, personal communication, July 28, 2023). Of the eligible students, 110 (15% of total) volunteered to complete an online survey. Of these respondents, 75 (10% of eligible students) completed the survey questions used for this research. Of these 75, 11 (15% of respondents) identified their main campus as the Thunder Bay campus, and 64 (85% of respondents) identified their main campus as the Orillia campus.

Qualitative Data Source — Two Case Studies

The case studies in this research were two online courses. The source of the qualitative data for the case studies were each course's Brightspace page, course documents such as a course outline or syllabus, and other websites affiliated with the course.

Participant Recruitment

Recruitment of Online Survey Participants

Potential survey participant recruitment occurred via email invitation. The survey was open for 2 weeks with 3 reminders given during this time. Participants self-selected into the study individually. An incentive was offered — participants who completed the

questionnaire were permitted to participate in a draw for prizes through a separate Google Form where they enter their name and email. The prize was a pool of fifty-dollar gift certificates to the Lakehead University bookstore. Survey participants were informed of the potential uses of the survey and consented to participate.

Selection Criteria for Case Studies

I selected the two case studies based on survey results. These two courses (Case Study 1 and Case Study 2) were the two most frequently mentioned by survey participants as effective courses. Almost 10% of survey respondents identified Case 1 as an effective course. Almost 7% of survey respondents identified Case 2 as an effective course. I identified a potential third case study, but I excluded it, as it contained the same instructor as one of the case studies selected. I preferred classes hosted by different instructors for the case studies, for the purposes of exploring potential differences.

Data Collection

Online Survey

The data used in this research was secondary data extracted from the Operation Happy To Be Here (OH2BH) 2023 survey, which was delivered online using Google Forms in the winter semester of 2023. OH2BH is a pre-existing annual survey at Lakehead University that first ran in 2019. The 2023 OH2BH survey consisted of over 100 questions, with this research's questions added. We will not touch on the other questions included within the OH2BH 2023 survey. These questions are part of other researcher's works and are not applicable to our research. We will instead focus specifically on the questions added by this research into the survey and the results yielded by our examination of these questions.

The data extracted consisted of the responses to 10 questions inserted into the OH2BH 2023 survey related to the adapted SIPS model in Figure 2. The questions selected were based on those used in previous research into the SIPS model (Weidlich & Bastiaens, 2019). In addition to these were questions that prompt a student to identify a particular online course alongside questions created for this research regarding the best practice

characteristics. Questions needed to be created for design, assessment and facilitation that adhere to the description of best practices identified within this research.

The response scale used for questions aside from those that identify a course was a 5-point Likert scale ranging from 1 being “strongly disagree” to 5 being “strongly agree” (Likert, 1932). I list the questions used for this research that were added to the 2023 OH2BH survey in Table 1. For each question, I present the response format, origin, and variable.

Table 1

Operation Happy To Be Here Survey Items Used

Variable	Question	Response Format	Origin
Course	Identify this course by name or course code (preferred):	Short answer.	Created for this survey.
Semester	Which semester was this course in?	Multiple choice; Fall, 2022 or Winter, 2023	Created for this survey.
Format	Course format:	Multiple choice; Asynchronous, Synchronous, Hybrid	Created for this survey.
Sociability	The online learning environment of this course enabled me to easily contact my classmates.	Likert 5-Point scale.	Kreijns et al. (2007), with wording changes for a non-CSCL context.
Social Interaction	I heard and understood others’ pitch and tone of voice in the online classroom by emoticons, text, or audio/video.	Likert 5-Point scale.	Wei et al. (2012)
Social Presence	Within this learning environment, it felt as if we were a face-to-face group.	Likert 5-Point scale.	Weidlich et al. (2018)
Social Space	My classmates conducted open and lively conversations and/or discussions within the online classroom.	Likert 5-Point scale.	Kreijns (2004), with wording changes for a non-CSCL context.
Design	The content within this course was organized and easy to follow.	Likert 5-Point scale.	Created for this survey.
Assessment	The instructor assessed us using a variety of different assignments (ex. Projects, portfolios, self-assessments, peer evaluations, weekly	Likert 5-Point scale.	Created for this survey.

	assignments, quizzing, discussion posts).		
Facilitation	I felt as though the instructor was always close at hand and able to be reached if required.	Likert 5-Point scale.	Created for this survey.

In its initial design, Lakehead University's Office of Research Ethics approved the OH2BH survey. The creation of the OH2BH survey involved consultation with Lakehead University's Office of Human Rights and Equity, Student Accessibility Services, and the Faculty of Education at Lakehead University. The OH2BH 2023 survey received ethics approval before recruitment of participants began.

Case Studies

Data collected for the case studies were in the form of online documents, including the online course's Brightspace page, course outline, syllabus, and other websites affiliated with the course. I collected the data after the courses were terminated. When possible, I downloaded documents prior to analysis. I did not download documents or text that are web-based prior to analysis.

Transforming the Data

Online Survey. I examined and cleaned the online survey data through a series of steps. Table 2 details the steps taken during the data cleaning process. The goal of cleaning the dataset is to increase consistency and clarity while eliminating sources of uncertainty. The steps taken are reactions to problems within the data. Mainly these problems are respondents not referring to an online class, respondents giving a class that does not cleanly point to one specific online class, and minor errors within a response such as an improper course code or date. The data cleaning did not fundamentally alter the data's content, but removed errors and mistakes that may decrease readability and utility within subsequent analysis. After data cleaning, the dataset consisted of responses from 61 participants.

Table 2

Data Cleaning Problems and Solutions

Problem	Example	Solution	Rationale	*n*
The course designated by participants may not be online.	• Participants leave questions to identify the course blank. • Participants write a non-online course into the course identification questions. • Participants indicate a non-online course or having not taken an online course.	Entries removed from the data set.	It cannot be certain if these responses pertain to the subject of this research — online learning.	18
Cannot be matched with singular class using the Lakehead University 2022-2023 timetable search.	• The specificity of the answer given by the participants to the course identifying questions is too vague, though it does match for at least two or more online classes • The participant specified a class that is online but could have been taught by many different instructors in that term.	Removal of answers to identifying questions for these entries.	Even without identifying information, entries pertain to online learning at Lakehead University.	29
Responses have unclear elements and do not conform to the Lakehead University 2022-2023 timetable search.	• A class is identified as 'synchronous' and 'asynchronous' simultaneously by a participant. • Participants gave an answer that allows a singular course to be determined, though the answer itself is not a course code. Ex. 'Math taught by [instructor] in this term'.	Cleaning of entry to bring it in line with what is listed as course code, term and format on the Lakehead University 2022-2023 timetable search.	This step increases the clarity and consistency of responses within the data.	37

Case Studies. Any identifying information in regards to the course or instructor were removed from the documents.

Data Analysis

Online Survey

Descriptive statistics were used to analyze the survey data. The median and interquartile range were used to describe the survey results. These were calculated using IBM SPSS Statistics (Version 28). As this data is ordinal and a skew is present in the distribution of scores, the median and interquartile range were appropriate measures of central tendency and dispersion (Gravetter et al., 2021).

Inter-item correlations were used to examine the relationships between survey questions and the adapted SIPS model in figure 2. I computed Spearman rank correlations using IBM SPSS Statistics (Version 28) to examine the relationships between the variables of sociability, social interaction, social presence, social space, design, assessment, and facilitation. I chose the Spearman's rank correlation for this analysis, as the data was ordinal. Furthermore, the Spearman rank correlation examines the direction and strength of the relationship between variables (Gravetter et al., 2021).

Case Studies

I conducted a deductive and inductive analysis on the case study data. I began by generating codes from the research literature (see Table 3). The codes chosen to guide analysis directly relate to the previous review of the literature. I aligned them with three categories of design, assessment, and facilitation, and served as sub-topics that compose each of these three themes. Notable is the leaving out of the categories of 'evaluation'. I cannot justify evaluation's inclusion due to it not being able to be identified separately from the other themes. Evaluation is an iterative process of course improvement and the case studies I selected are to be examined over a singular, bounded semester (Martin et al., 2019). Likewise, Martin et al. (2019) groups evaluation with another category, lending strength to the idea that it's not substantive enough on its own.

During the analysis, I noted emerging codes and included them in the final coding list, representing an inductive addition that permits unexpected data to appear from the analysis. Paired with the deductive focus on initial code generation and categorization, a

researcher can better prepare for foreseen and unforeseen emergent information from their analysis. This data analysis strategy used is similar to recommendations by Bingham and Witkowsky (2022) for the analysis of qualitative data.

Table 3

Preliminary Codes List

Type	Code	Description	Source
Design	Alignment	Course activities and assignments related clearly to defined learning goals and objectives.	Wasfy et al., 2021; Cobb et al., 2018
Design	Chunking	The breaking down of course structure and content into clear and coherent subsections.	Wasfy et al., 2021
Design	Clarity and Organisation	Consistent formatting of online learning modules, clarity of objectives, simplifying length and content of course content where possible.	Wasfy et al., 2021; Cobb et al., 2018
Design	Accommodation	Designing to accommodate a variety of students and their needs. Flexibility of design.	Camacho & Legare, 2021; Schultz and DeMers, 2020; Martin et al., 2019
Design	Active Learning	The integration of active learning into assignments, activities and tasks.	Camacho & Legare, 2021; Nguyen et al., 2021; Wasfy et al., 2021; Schultz and DeMers, 2020; Tanis, 2020
Design	Variable Instruction	Designing for instruction through a variety of different modalities and methods.	Camacho & Legare, 2021; Nguyen et al., 2021; Wasfy et al., 2021; Acevedo, 2020; Tanis, 2020
Design	Design for Interaction	Specifically designing activities and tasks for interaction between students.	Camacho & Legare, 2021; Greenhow & Galvin, 2020; Martin et al., 2019
Assessment	Variety	The use of a variety of types of assessments and assignments.	Krebs et al., 2021; Acevedo, 2020
Assessment	Rubric Use	The use of rubrics for all types of assignments.	Tanis, 2020; Martin et al., 2019
Assessment	Rapid Feedback	Quickness of feedback.	Wasfy et al., 2021
Assessment	Clear Feedback	Actionable and useful feedback provided.	Wasfy et al., 2021
Assessment	Feedback Tone	Taking a warm and positive tone when relaying feedback.	Foster et al., 2018
Facilitation	Monitoring	The instructor's active attention and observance of activities.	Carrillo & Flores, 2020; Schultz & DeMers, 2020; Tanis, 2020
Facilitation	Instructor Activity	The instructor's presence and availability to the students.	Schultz & DeMers, 2020; Tanis, 2020; Martin et al., 2019
Facilitation	Timely Response	Quick feedback on assignments and prompt responses to student questions.	Gui et al., 2021; Mullen, 2020; Schultz & DeMers, 2020; Tanis, 2020; Martin et al., 2019
Facilitation	Voice and Video	The use of voice and video to assist instructor presence.	Nguyen et al., 2021; Martin et al., 2019
Facilitation	Modelling	Demonstrating use of course tools and technologies, providing support.	Greenhow & Galvin, 2020; Roddy et al., 2017
Facilitation	Course	Periodic communications to all students	Camacho & Legare, 2021; Hicks et

	Communication	over the duration of the course.	al., 2019; Foster et al., 2018
Facilitation	Take-Home Messages	Summarising important points as take-home messages.	Cobb et al., 2018
Facilitation	Personal Communication	Communicating to students directly, addressing them specifically.	Camacho & Legare, 2021; Hicks et al., 2019; Foster et al., 2018
Facilitation	Positive Tone	Using an inviting and warm tone within communications.	Hicks et al., 2019; Foster et al., 2018

I coded the data manually in two separate passes. The first pass involved identifying chunks of data, for example, the content tab of the course's Brightspace page, to gain an understanding of the course's overall structure and organisation. I took notes at this time. The second round of coding followed a closer examination of previously identified chunks of data using the code list. I coded emerging codes under the code 'other'. Curiously, despite my dismissal of evaluation as not being substantive enough to include, it reappeared as an emerging 'other' code, with some evidence showing its presence.

Results

Research Question 1

RQ1. In terms of student perceptions, how well do certain online classes at Lakehead University bear attributes of an effective social environment as dictated by the SIPS model (Weidlich & Bastiaens, 2019), while also adhering to the concepts of an effective online course as identified by Martin et al. (2019)?

Table 4

Survey Item Frequencies, Median and Interquartile Range

Variable	Question	Strongly Disagree		Disagree		Neither disagree nor agree		Agree		Strongly Agree		*n*	*Mdn*	*IQR*
		f	%	*f*	%	*f*	%	*f*	%	*f*	%			
Sociability	The online learning environment of this course enabled me to easily contact my classmates.	2	3	5	8	10	16	18	30	26	43	61	4	3-5
Social Interaction	I heard and understood others' pitch and tone of voice in the online classroom by emoticons, text, or audio/video.	0	0	6	10	12	20	23	38	19	31	60	4	3-5
Social Presence	Within this learning environment, it felt as if we	9	15	7	12	15	25	11	18	18	30	60	3	2-5

	were a face-to-face group.													
Social Space	My classmates conducted open and lively conversations and/or discussions within the online classroom.	3	5	6	10	7	12	25	41	19	31	60	4	3-5
Design	The content within this course was organized and easy to follow.	1	2	1	2	3	5	19	31	37	61	61	5	4-5
Assessment	The instructor assessed us using a variety of different assignments (ex. Projects, portfolios, self-assessments, peer evaluations, weekly assignments, quizzing, discussion posts).	0	0	2	3	2	3	26	43	31	51	61	4.5	4-5
Facilitation	I felt as though the instructor was always close at hand and able to be reached if required.	2	3	3	5	2	3	17	28	37	61	61	5	4-5

Table 4 contains the frequencies, the median (*Mdn*) and the interquartile range (*IQR*) of the survey items across all respondents, both Orillia and Thunder Bay. I chose median and interquartile range as useful measures as both "can be used for data measured with an ordinal scale of measurement" (Gravetter et al., 2021, p. 115). I measured the survey items with a 5-Point Likert Scale. Due to this scale, accurate measurement of the survey items through other measures of variability and calculating the mean isn't feasible, as the use of the scale renders the data ordinal.

Through Table 4, we have an understanding of which elements of SIPS and best practices the survey respondents identified within a 'best' online class of their choosing. From this, we can identify trends within the data:

- The SIPS Model elements of sociability, social interaction, and social space shared a tendency for those surveyed to agree with their presence, with a level of variability between responses (*Mdn* = 4, *IQR* = 3-5). Sociability, social interaction and social space were present within these 'best' classes.
- Best practice elements of design, assessment and facilitation showed a greater perceived presence by the students than the SIPS model elements. Design and facilitation were both present in the best courses,with low variability within those

responses (*Mdn* = 5, *IQR* = 4-5). Assessment was slightly less present in the best courses and with a low variability in those responses (*Mdn* = 4.50, *IQR* = 4-5).

- Social presence was not associated with the classes, with a median response as "Neither agree or disagree" and larger interquartile range (*Mdn* = 3, *IQR* = 2-5) when compared to other question variables.

With the exception of social presence, the responses show that within this sample of students, students perceive effective online courses as bearing elements of the SIPS model, as well as elements of pre-existing online learning best practices. The findings here lend support to the hypothesis of these elements being co-present within perceived effective online courses.

Table 5 shows a series of Spearman's rank correlations between the surveyed elements. These correlations were used to help 'test' the adapted model proposed in Figure 2.

Table 5

Spearman's Rho Correlations of Survey Respondents

Variable	*N*	1	2	3	4	5	6	7
1. Sociability	61	–						
2. Social Interaction	60	.60**	–					
3. Social Presence	60	.57**	.67**	–				
4. Social Space	60	.58**	.65**	.69**	–			
5. Design	61	.46**	.34**	.50**	.44**	–		
6. Assessment	61	.33**	.15	.21	.21	.53**	–	
7. Facilitation	61	.55**	.26*	.48**	.43**	.65**	.60**	–

Note. * indicates p < 0.05 (2-tailed) ** indicates p < 0.01 (2-tailed)

For the purposes of this research, 'modest' correlations of over .50 were notable (Gravetter et al., 2021). Within Table 5, we can see that among sociability, social interaction, social presence, and social space, there are significant, modest and positive correlations over .57, suggesting that as one of these measures increases, so do the others in this group. Similarly, there are significant correlations over .53 between design, assessment and facilitation, suggesting that as one of these measures increases, so do others. Since correlation does not imply causation, we cannot interpret results as causal relationships. It is

interesting to note that, in general, that the correlations between the SIPS measures and the design measures are lower (some not statistically significant), indicating that there may be a two-factor structure with SIPS measures loading onto the first factor and design measures onto the second factor. The largest exception to this pattern is the correlation of 0.55 between facilitation and sociability. The presence of this correlation suggests that facilitation has a connection to both the SIPS measures and design measures.

It is also interesting to note that assessment only has significant and positive correlations to sociability (weak), design, and facilitation. Assessment does not have a significant relation to other measures, suggesting that assessment is independent of social interaction, social presence, or social space.

In terms of the adapted model of Figure 2, five predicted correlations were important. Design and sociability, social interaction and facilitation, social interaction and assessment, facilitation and social presence, and lastly, assessment and social presence. Of these five, only design and sociability ($r(59) = .464$, $p < 0.01$) and facilitation and social presence ($r(58) = .478$, $p < 0.01$) demonstrated the proper positive and significant correlations. Even so, these two examples are only modest in strength and below the notable cutoff of .50.

The consistency and strength of correlations within both constructs lend strength to these constructs being their own discrete constructs of SIPS model elements and best practice elements, with both having their constituent elements tied together in their co-presence. The correlations across constructs lend strength to the idea that these constructs are linked together. However, despite these connections, the adapted model of Figure 2 does not show strong support.

Research Question 2

RQ2. Within a class specifically mentioned to be effective by surveyed students, which elements of effective course design, assessment, evaluation, and facilitation as identified by Martin et al. (2019) can be seen within the learning environment? How do these elements contribute to the formation of an effective social environment?

I presented the results of the data analysis for research question 2 in Table 6. Table 6 shows the final list of codes for each element of the model, followed by examples from the case studies.

Table 6

Final Codes and Case Study Examples

Code	Case Study 1 Examples	Case Study 2 Examples
Design		
Alignment	• Weekly sections have defined objectives and prompting questions. • Course website aligns learning goals and objectives to activities listed	• Not present.
Chunking	• Content broken down by weeks into clear and distinct subsections of the course. • Course website follows this breakdown into weeks.	• Content separated into clearly delineated 'modules' for each week.
Clarity and Organisation	• Clear starting points in each weekly section to give students a sense of where to begin. • Class website provides a clear pathway to navigate the content and orient the learner to tasks.	• Readings simplified into smaller pieces contained within the weekly modules. • The course outline explains the overview of content and topics.
Accommodation	• Zoom meetings permit students to meet with the instructor. • Course website offers additional modality to interacting with content. • Reference material provided linking to other resources to assist students.	• Students were permitted to opt out of certain discussions, permitting more agency and flexibility.
Active Learning	• Activities remain varied and active, including creating visual and graphical content and using different tools and software.	• Not present.
Variable Instruction	• Zoom meetings permit students to receive synchronous instruction. • Information given via video, audio, interactive and text content.	• Primarily reading and writing tasks, with Zoom sessions and some video content.
Design for Interaction	• Zoom meetings give an opportunity for students to interact with one another. • Activities designed for interaction with assignments requiring feedback from peers, class discussions on different programs, and a discussion board.	• Discussion boards used prominently. Discussions generally include an initial posting by a student then a response by another student. • Optional Zoom meetings for 'office hours'.
Assessment		

Variety	• Activities are varied, using different tools and include designing graphical content and creative tasks. • No test or exam, assessed via discussion boards, class activities, and a main on-going assignment during the term.	• Three separate major assignments. Each was writing based. • A quiz was held. • Discussion posts were used prominently as an activity.
Rubric Use	• Rubrics used and able to be viewed in the course's Brightspace rubric section.	• Rubrics used and able to be viewed on the course's Brightspace rubric section.
Rapid Feedback	• Feedback is usually provided within four days.	• Feedback is usually provided in two weeks.
Clear Feedback	• Each student has a personalized mark tracking spreadsheet (Grade Grid) between them and the instructor which helps track assignments and work for completion.	• Feedback primarily consists of grades on rubric, with some written feedback.
Feedback Tone	• Feedback takes a friendly tone, gives suggestions, mentioning what they liked, thanking students for submissions, saying they look forward to their progress.	• Tone taken was generally critical, with some encouragement and praise added.
Facilitation		
Monitoring	• Mark tracking spreadsheet shared by instructor, used to monitor and track progress. • Course surveys pre-course, mid-course and end-course used to refine course, communicate with students, including specific sections that could be dropped or kept.	• Not present.
Instructor Activity	• Zoom meetings offered augment instructor presence and show availability.	• Instructor able to be contacted via open 'office hours' on Zoom on specific days.
Timely Response	• Feedback provided within four days.	• Feedback is usually provided in two weeks.
Voice and Video	• Zoom meetings give a video and audio presence for the instructor.	• Instructor 'office hours' permits synchronous meetings.
Modelling	• Weekly announcements show examples of assignments. • Weekly content explains new tools and their use as well as activities.	• Announcements provide examples, clarification and additional information regarding course content.
Course Communication	• Weekly announcements provide periodic communication. Pre and post class announcements were had.	• Course announcements were regular. One every one to two weeks of the class.
Take-Home Messages	• Weekly announcements give reminders on important task elements to consider.	• Not present.
Personal Communication	• Each assignment submission paired with individualized feedback. • Personalized score tracking between students and instructor.	• Not present.
Positive Tone	• Announcements use a friendly and pleasant tone, with small clip art images that help strengthen that tone.	• Feedback is primarily critical in tone. • Announcements have a friendly tone but remain formal.
Other		
Evaluation	• Pre-class, mid-class and end-class survey. Surveys ask for thoughts and critical feedback from students, for the purposes of improving	• Feedback given by students through Lakehead University initiative in an anonymous

	student experience and the course going forwards.	survey not made by the instructor.
Discussion Board	• Discussion board tasks did not contain lively discussion between students or include the instructor.	• Discussion boards did not contain lively discussion between students or include the instructor.

From the above codes and their presence within the two case studies, we can extrapolate information about these two classes and their similarities and differences. For this discussion, I will group similarities and differences by category (design, assessment, facilitation, and other) and then mention particular themes within the emergence of codes related to those categories. I will discuss each of the categories' themes in the following section. For each section, I describe the theme, then similarities between Case Study 1 and 2 on the theme, followed by differences between Case Study 1 and 2.

Differences in Fundamental Design Between Case 1 and Case 2

It is worth mentioning that Case Study 1 had a more complex and expansive design, using many tools outside of their Brightspace page, while Case Study 2 had a more simplified and concise design, with all elements of the course included within its Brightspace page. Both case studies show examples of best practices in action from Martin et al. (2019) and our previously examined literature, though they also show elements that go against these pre-established best practices, and both feature a differing design and approach. Both case studies showcase a mix of similarities and differences across their differing design and approach, increasing the value of links between them.

Similarities and Differences Between Case 1 and Case 2

Design: Course Structuring and Presentation. Both case studies focused on the structure and presentation of the course, learning objectives and goals, and course content. These focuses align with several key best practices within the design category. Both case studies broke down their content and lessons by week, delivering an organized experience to their student with a listing of specific tasks to be completed for each part of the course.

Case Study 1 showed an exceptional focus on structure and presentation. It used both a course website and the class' Brightspace page, aligning learning goals and objectives directly to the activities listed in each week. Organization shows throughout Case Study 1, with its weeks organized into coherent and distinct subsections of the course that include listed purposes, objectives, prompting questions, and learning goals. Case Study 1 clearly broke down each week's tasks and activities on both the course website and Brightspace pages, with the course Brightspace environment giving an overview of the week, while the course website focuses on that weeks' reading, activities and other content in detail. In this way, the Brightspace page was helpful for 'orientating' a student's learning and objectives for the week, and from there the students can read and watch and participate in the content featured on the course website. Assignments, activities and work due is posed as a reminder on both the course Brightspace page and on the course website, increasing their visibility.

Case Study 2 took an alternate approach to its course content. Instead of focusing on multiple modalities and ways of delivering the course content, Case Study 2 featured clearly delineated 'modules' for each week. Case Study 2's Brightspace page wholly contained the content of the course without the addition of a course website.

Design: Building for Students. Each case study demonstrated a focus on designing for students and accommodating them. This encompasses several best practices, including variable instruction, designing for interaction, and designing for accommodation. Both case studies featured an initial 'introduction' area and activity for students to post to within their discussion boards, as a means of these students introducing themselves, their interests and 'breaking the ice'. This may be an important — if small — component that assists a student in feeling more comfortable and able to interact with these learning environments.

Case Study 1 accommodated students through Zoom meetings (https://zoom.us/) where they could have synchronous time with the instructor to voice questions and concerns. The course website's additional modality permitted students a way to interact with the course content outside of the Brightspace page. Additionally, Case Study 1's course website

provided links to important and useful resources and reference material to assist in guiding a learner toward help and assistance.

Case Study 1 featured varied activities using a variety of different tools and tasks. These included making word clouds, creating visualisations and concept maps, alongside activities such as discussion posts and a long-term writing project. The activities within the course often focused on an interactive element, such as sharing feedback to peers on their assignments and class discussions via a discussion board, chat programs and tools that focused on interaction between students such as Flip Grid (https://info.flip.com/en-us.html), Google Chat (https://mail.google.com/chat/), Google Drawings (https://docs.google.com/drawings/), Cube for Teachers (https://cubeforteachers.com), and Jamboard (https://jamboard.google.com/). The content contained a variety of different modalities, including audio, video, images, text and interactive elements.

Case Study 2's approach included a similar allowance of students to meet with the instructor via Zoom during specific days designated as 'office hours'. Primarily, tasks and activities focused on reading and writing, with some video content to watch. Case Study 2 used prominently its discussion board during the week's activities as a means of posting answers to the week's questions placed under the 'modules' for that week. An accommodation method taken by Case Study 2 — in reference to its strong reliance on discussion boards — is the ability for a student to 'opt out' of one of the class' discussions with no penalty to marks. This freedom permits a student to have a level of flexibility within their schedule by virtue of the allowance to lighten a week's work by their own choice if potentially needed to work on an assignment or another class' work.

Assessment. Both case studies included all best practice elements from within the assessment category within some form. These include assessment variety, rubric use, rapid feedback, clear feedback, and feedback tone. The presence of all best practices within this category highlights its importance.

Case Study 1 used a varied set of activities, and did not include tests or exams. The major elements of assessment came through ongoing participation in the discussion boards and class' other activities, alongside a major assignment that's completed in stages over the course of the duration of the class. Rubrics were used to mark this major assignment, with these rubrics available for the students to see on the Brightspace page. Case Study 1 delivered feedback within four days, except for a large part of the final assignment, from which the instructor took three weeks to deliver marks and feedback. Case Study 1's instructor presented feedback in a positive tone, thanking students for their submissions, mentioning that they look forward to their progress, pointing out strong points of their work, and giving suggestions in a friendly manner and tone. Feedback was likewise clear via rubric and also through a personalized and ongoing 'Grade Grid' between the instructor and each student. The design of a Grade Grid follows a system that lays out expected time for particular assignments and activities, how much those are worth, with marks filled in as an unofficial final mark to grant students a more visual representation of their progress in the course.

Case Study 2 focused on a few different major assignments of different types, literature analysis, a quiz, and writing assignments. These assignments are in addition to weekly discussion posts answering questions. In this way, it focused on assignments and a degree of ongoing participation in the class itself through the discussions. Case Study 2 used rubrics within the course to break down the marking criterion for the assignments and these rubrics remained visible to students as part of the course's Brightspace's page. Feedback within Case Study 2 took two weeks to a month on assignments, taking a primarily critical tone, but with some elements of praise and encouragement. Case Study 2's instructor used only some written feedback, provided alongside grades, and this feedback often explained the rationale behind a particular grading choice.

Facilitation: Instructor Presence. Within the case studies examined within this research, both demonstrated elements of facilitation focused on instructor presence. This includes instructor activity, course communication, voice and video as common elements between both classes.

In Case Study 1, the instructor made themselves present during Zoom meetings as a way to push interaction between themselves and the students. Though attendance of these sessions was mandatory, students could choose variable 'open' times to allow for flexibility in scheduling. The Grade Grid permitted students to have not only a means of tracking their progress but also a collaborative effort between them and the instructor to display their work as it's ongoing. The instructor likewise explained and modelled the use of the different tools and programs used within the course, often directing students toward resources to assist with the activities and tools used as part of the course.

Within Case Study 2, the instructor aimed to use the course announcements to provide examples of elements of an assignment or task for clarification, alongside additional information regarding course content. Similar to Case Study 1, Zoom meetings permit a student to meet with the instructor. Notably different in Case Study 2, Zoom meetings with the instructor are optional 'walk-in' office hours, rather than mandatory sessions.

Facilitation: Communication. The case studies each showcased levels of clear lines of communication used by the instructor of each course. Case Study 1 did more within this area as one of its major focuses, but course announcements were a major mode of communication shared between each course.

Throughout Case Study 1's course, the instructor gave announcements as weekly, periodic communication to all students. Announcements took a positive and pleasant tone, with small clip art images included of a smiling avatar face of the instructor to strengthen that friendly tone. Announcements often contained some reminders of important tasks to consider. In addition to course communications, the delivery of personal communication followed as individualized feedback to each assignment submission, alongside personal emails reaching out to students regarding the class and their progress. The Grade Grid score tracking is also a method of communication between instructor and student.

Case Study 2's course used announcements every two weeks. These announcements used a friendly, though formal, tone. Many channels of communication from instructor to student were not a major element of this course. This is another example of the differing

focus and design of this class. Case Study 1 featured much more communication and interaction at a fundamental level, but Case Study 2 predominantly focused on independent work and content learning. Case Study 2's independent focus can be seen across many elements, including the pace and content of the course's announcements.

Other: Evaluation. Additionally, within each case study, evaluation was a noted element. Each class aimed to collect feedback from students using a different method. Case Study 2 receiving feedback as part of Lakehead University's initiative to have students take an anonymous survey regarding the class and its quality, which the instructor directs the students to. In addition to this, Case Study 1 featured a pre-class, mid-class, and end-class survey, to get thoughts and critical feedback from students before, during and after the class' completion for the expressed purpose of improving student experience and the course going forwards.

The importance and value of this emergent theme ties back to its existence within the larger structure of best practice. I removed this theme from the categories, as I did not see it as having enough substance to be gauged within a bounded context of a singular semester. However, in both classes, we can see evidence of instructors aiming to receive information and critical feedback from students that they can use to improve their course. I can strongly perceive a push towards evaluation within Case Study 1 with its heavy use of instructor-delivered surveys that aim for students to critically analyze the course to apply changes to subsequent iterations of it. In Case Study 2, on the other hand, there is the presence of only the institutional push to gather feedback on behalf of Lakehead University. The instructor allotted time for the students to work on this.

From the usage of evaluation, we can further note the differences in Case Study 1 and Case Study 2. With a stronger, more active focus on facilitation, Case Study 1 represents a more changing, dynamic course that can vary between years and even change within years due to the focus on feedback. Case Study 2 only takes feedback at the end separate from the instructor, representing a more static course that may not undergo

dramatic iterative changes each year. The design of Case Study 2 possibly being more fixed and decided upon, rather than adaptive.

Other: Interaction and Discussion Board. Both case studies show best practice elements, alongside components that wouldn't generally be consistent with previously investigated best practices. In both case studies, the instructor did not have a presence within the class' discussion board activities, and both mostly consisted of the students answering a question, with the potential of a response from one other student. This does not constitute a lively discussion. Likewise, students taking part in Case Study 2 rated the course highly though it had notably less interactive and varied elements and potential for interaction between students.

In my experience with functioning as a teaching assistant, there was a large push by the course instructor for myself and the instructor to engage strongly and consistently with the discussion board to foster and model interaction among the students and aim to create a lively discussion. This addition of an emergent theme represents a surprising and confounding element to me. The discussion board represents a place for discussion and interaction between students, and it is both heavily used by both courses with required work each week posted into it, and at the same time the fundamental aspect of 'discussion' in this board is not noticeable.

In Case Study 1, I sometimes saw discussion board based discussion through a student's post with a post by another student responding to it. Likewise, Case Study 1 had other activities that required interaction between students outside of the discussion board, potentially excusing a lack of lively activity within it. I can see the opposite in Case Study 2, with a focus on more independent work showcased within that discussion board, and a general lack of interaction. The heavy and consistent use of a discussion board paired with it not featuring a 'discussion' is of note. Could students prefer a lack of interaction, being able to experience the presence and evidence of other students but not having to interact? Or is this an oversight in design showcased by both classes?

Case Studies and Sample Comparison

Alongside data yielded by a qualitative examination of the course content, we can note the discrepancy in scores between the sample and case studies. Table 7 presents the median and interquartile range scores for the sample, and then the two case studies.

Table 7

Median and Interquartile Range of the Case Studies and Sample

Variable	*n*	*Mdn*	*IQR*
Sociability			
Sample	61	4	3-5
Case Study 1	5	4	3-5
Case Study 2	4	4	3-5
Social Interaction			
Sample	60	4	3-5
Case Study 1	5	4	2-5
Case Study 2	4	3.5	2-4
Social Presence			
Sample	60	3	2-5
Case Study 1	5	2	1-4
Case Study 2	4	2.5	1-3
Social Space			
Sample	60	4	3-5
Case Study 1	5	4	1-4
Case Study 2	4	4.5	3-5
Design			
Sample	61	5	4-5
Case Study 1	5	4	4-5
Case Study 2	4	5	5
Assessment			
Sample	61	4.5	4-5
Case Study 1	5	4	4-5
Case Study 2	4	4.5	4-5
Facilitation			
Sample	61	5	4-5
Case Study 1	5	5	4-5

Case Study 2	4	5	4-5

Within this data, we can see a few trends. Largely, the case studies diverge from the sample itself, though there are two exceptions (sociability, facilitation). When the case studies diverge from the sample, they do so downwards, with lower scores than the sample, rather than higher ones, with two exceptions (Case Study 2 in social space and design). Social presence is also consistently lower within the case studies than the sample itself.

With this information, we can draw some conclusions regarding the two case studies when compared to the sample:

- In both case studies, every variable aside from social presence was generally seen as present, with a median score of 4 or 5. The case studies share this with the greater sample.
- We can consistently note social presence as low within both Case Study 1 (*Mdn* = 2, *IQR* = 1-4) and Case Study 2 (*Mdn* = 2.5, *IQR* = 1-3). Within the larger sample, the responses imply the perceived occurrence of social presence to be generally viewed neutrally with a median of 3. However, within the case studies that possess a lower median it is more common for responses to 'disagree' or 'strongly disagree' with its presence.
- Case Study 1 has less of a consistent presence of social interaction (*Mdn* = 4, *IQR* = 2-5) reported than the sample, alongside social space (*Mdn* = 4, *IQR* = 1-4). Less of a strong presence of design (*Mdn* = 4, *IQR* = 4-5) as likewise reported.
- Case Study 2 has less of a presence of social interaction (*Mdn* = 3.5, *IQR* = 2-4) reported then the sample, but then it has greater social space (*Mdn* = 4.5, *IQR* = 3-5) and design (*Mdn* = 5, *IQR* = 5) elements reported then the sample itself.

In terms of scores itself, Case Study 2 has higher scores compared to Case Study 1, reported by its students. This provides an interesting conflict, as Case Study 2 was seen as having fewer elements of best practice within itself than Case Study 1 during qualitative analysis, but it was higher rated in the design and assessment categories.

When it comes to an analysis of the SIPS Model components themselves, both Case Study 1 and Case Study 2 match the sample in the area of sociability. We thus can put forth both spaces as equally capable of containing and facilitating social interactions. However, Case Study 2 is seen as containing less social interactions than Case Study 1 and the sample. Then, both Case Study 1 and Case Study 2 have low social presence that makes other actors within these spaces feel 'real'. Finally, Case Study 2 is seen as a superior example of a social space by its students than both the sample and Case Study 1.

Discussion

The goal of this research was a multi-facetted examination of online learning, aiming to reconcile practical aspects of best practices in online education with the theoretical concepts of what creates a social learning environment online. The findings of this research revealed that when students at Lakehead University choose an online course they feel is an effective course experience, this course contains elements of pre-existing best practices in online education, as well as social elements. Best practices of facilitation, assessment and design were most strongly perceived by students in terms of their chosen classes, followed by the social elements of sociability, social interaction and social space. Not as strongly perceived was social presence itself among those surveyed.

To explain the presence and strength of best practice elements, and then social elements, students may feel that these 'best' classes are well-designed and conveyed to them, they have social interaction insofar as the process of exchanging messages between students, they perceive a network of social relationships between themselves and others within the learning environment, and the online environment is capable itself of sustaining and facilitating social interaction. Though without perceived social presence these students may feel that they suffer a fundamental disconnect from who they are speaking with and an inability to truly perceive those around them as 'real', as salient social actors within the online learning environment (Weidlich & Bastiaens, 2019).

Factors Within Case Studies

Other literature explores the phenomena of *perceived isolation* from other students in an online learning environment under the term 'alienation' (Sarwono et al., 2022; Phirangee, 2016; Wei et al., 2012). It is possible that the physical alienation from others makes students still feel fundamentally detached and thus score a low perception of social presence, despite the perception of an environment suitable for social interaction. Both case study classes featured an introduction area for students to break the ice, but further research may find success in working to uncover exercises and activities that assist students in lowering feelings of isolation and alienation caused by a low social presence (Mehigan et al., 2023; Wei et al., 2012).

In terms of a practical examination from this research of student nominated effective online classes and their alignment to best practices, we can observe a number of practices consistent with prior research within the two online classes chosen as case studies (Martin et al., 2019, Foster et al., 2018). Both classes had a focus on week-to-week organisation, clearly breaking down their class into coherent and separate sub-sections for each week of the course. Students could work on those subsections a week at a time as each had a clear listing of the tasks, assignments and activities for the weeks therein, while receiving consistent announcements from the instructor that provided clarification, examples, reminders and support. The students in both classes had the opportunity to participate in synchronous sessions with their instructor, to receive personal guidance and instruction. Finally, the assessment of students within both classes uses rubrics viewable prior to assignment submission.

These findings show a level of consistency with Carrillo and Flores' (2020) analysis of online learning literature. Using 134 empirical studies, Carrillo and Flores (2020) synthesized lists of attributes desired within online learning by teachers and students. We can see several of these attributes within the case studies;

- The instructors of the case study classes using a positive tone relate to *affective responses*.

- Instructor's ability to meet with students and provide personalized feedback ties into providing *high levels of support*.
- The instructor's ability to be reached and give quick feedback relates to *prompt communication*.
- The instructors used discussion-based activities prominently, providing *regular discussions*.
- The weekly pacing of discussion activities works to have learners develop an *active and inclusive attitude* and encourage *timely contributions*.
- Course content and activities favored were largely *authentic and practical activities*.

Though consistency with Carrillo and Flores' (2020) findings are not universal within this study as many elements do not fully align or are outside of the scope of this study, a level of consistency with the findings of the literature analysis offers a level of strength. The alignment with a larger view of online learning that does exist showcases (a) a level of consistency in what makes an 'effective online course' in both the eyes of teachers and students (b) a method of verifying that factors examined through literature analysis and quantitative surveying in this research have a level of generalizability and utility outside of just the analysis of two isolated case studies.

Even with this note, it is important to consider that the similarities between the two case studies are far less pronounced than their differences. Both case study classes had a separate focus design-wise. The first case study focused on a larger quantity of varied content pieces, delivered through many modalities, containing interaction between students while being assessed with varied types of assessments which is consistent with prior research into active learning, assessment variety, variable instruction and designing for interaction. The primary focus of the second case study, by contrast, centred on individual reading tasks with few video tasks, followed by writing tasks.

An aspect that surprised me when examining online courses was the lack of interaction between instructor and students within discussion boards. This was a key focus that was emphasized during my time as a Teaching Assistant, and I assumed that a course

that was seen as 'effective' would also feature this sense of personal interaction between instructors and students. This challenges me to consider if students potentially appreciate the lack of interaction and scrutiny, or if this was a positive element that was not included by both case study instructors. Other research places evidence for the second option, as that research identified a preference for interaction between instructors and students, and between students themselves (Camacho & Legare, 2021; Schultz & DeMers, 2020; Martin et al., 2019; Foster et al., 2018).

In terms of topic, the two case study courses differed dramatically. Case Study 1 focused on technical aspects and technology, while Case Study 2 focused on a topic that may have strong personal meaning for many students. These topics can have an impact on the perceived quality and meaningfulness of a course, as each respondent may have had a different view of what made an 'effective course experience'. In Mardi (2019), a student's interest in the course topic is seen as related to their satisfaction with the course. Even if Case Study 2 did not display many aspects of best practice and social characteristics, the personal meaning of the class could have been a moderating factor that influenced the perception of an effective course experience.

As each case study course had a different focus and tone and with both rated highly by students, it may be an important insight and idea to not consider a 'singular best way' or 'one size fits all approach' to teaching online — a course may depend heavily on the subject and the variety of students within the class itself for what constitutes as its 'best practices' (Gillett-Swan, 2017). It may also mean that these classes represent two different groups of students and what they prefer as individual groups, or that the present case studies offered may be the 'best' out of what online classes are currently being offered and still have room for improvement toward a state that future students may judge as even better.

Model Revision and Focus on Facilitation

For a theoretical contribution to the literature, I examined the earlier proposed adapted model of Weidlich & Bastiaens' (2019) SIPS model within this research.

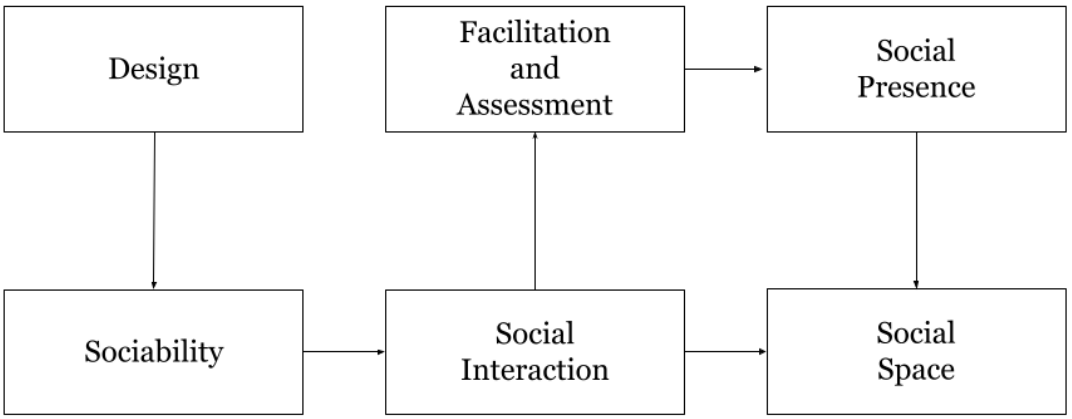

Fig. 2. The SIPS model (Weidlich & Bastiaens, 2019) adapted for this research.

Following Figure 2's proposed model, RQ1 tested this model with Spearman's rho correlations. Though this model had some significant correlations to bring them in line with this new design, it missed other correlations that tied it together. For our proposed model to be valid, we needed the new design to be linked through these correlations following the connections we drew between their elements. Design must correlate with sociability, social interaction must correlate with facilitation and assessment, and facilitation and assessment must, in turn, correlate with social presence. We could not establish these connections and relationships across the board. Due to this lack of support, using Research Question 1 and the connections we did observe through it, the adapted model was then modified (See Fig. 3). This modified model represents what we have learned as part of this research.

Instead of the trends we had hypothesized SIPS and best practice elements had correlations that connected each together strongly as their own specific constructs. Facilitation had the strongest correlation with the SIPS model element sociability ($r(59) = .55$, $p < 0.01$). Facilitation's correlation with sociability may form a connection able to be used to 'bridge' these separate constructs. Ultimately, we can see best practices and the SIPS model as quite distinct from one another. They both are their own constructs, they both are valid as their own constructs. However, the newly reorganized model takes advantage of the best link found between these constructs to offer an explanation for a potential connection and an idea of how they may be bridged. It offers an idea of a linkage between what we

practically understand in terms of best practices and what we theoretically envision social online learning environments to be. This bridge is through facilitation.

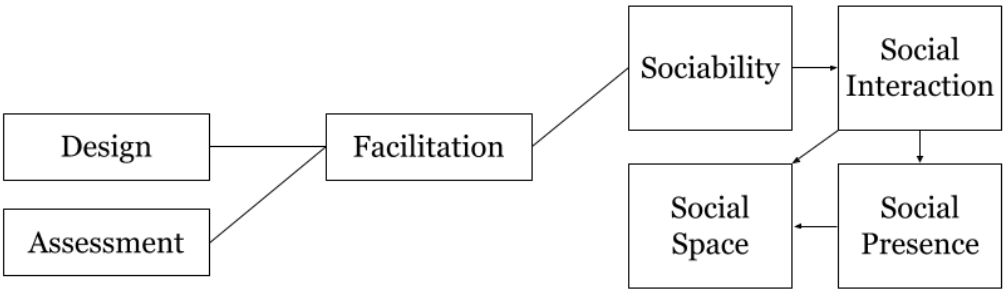

Fig. 3. The adapted SIPS model (Weidlich & Bastiaens, 2019) proposed by this research, informed by Research Question 1.

Figure 3's adapted model showcases a connection between best practice and SIPS model elements using what I've learned as part of this research. From the information we've uncovered, we can possibly use facilitation as a bridge to connect to the SIPS model through sociability. Reorienting our thinking, the connection of facilitation and sociability logically follows, if sociability is the perceived ability of the environment to "facilitate quick, easy, and informal social interaction, especially in the socio-emotional dimensions" (Weidlich & Bastiaens, 2019, p. 3), then a focus on communication, feedback, monitoring and interaction will strengthen this perception. Considering this concept deeper, a potential linkage between these ideas might have to do with 'modelling'. Facilitation, through the dimensions examined of response and feedback, availability and presence, and periodic communication encompasses communication and interaction (Martin et al., 2019). Prior research showcases that facilitation relates to the instructor reaching out to communicate with members of the course and foster meaningful interaction (Camacho & Legare, 2021; Acevedo, 2020; Carrillo & Flores, 2020; Hicks et al., 2019; Foster et al., 2018; Roddy et al., 2017). Because of this focus on communication in private and public spaces, paired with availability and presence, it can possibly have an effect to 'model' social behaviours within the course (Cerniglia, 2011). This can then carry forwards in two ways:

- Firstly, by virtue of creating social content through their communications within an online course, a professor can be helping to create a perception of the space as one that can contain social interaction (Weidlich & Bastiaens, 2019).
- Secondly, this concept of modelling could help guide the students into interactions with one another and engagement with the course, as the professor is demonstrating behaviours and patterns of attentiveness and interaction that they could display throughout the course (Cerniglia, 2011).

Martin et al.,'s (2018) research into facilitation itself identifies that skilful facilitation can "[encourage] students to become more engaged in their courses" (p. 63) but the findings of this research may illustrate that effective facilitation can also the social fabric of an online course. In this way, facilitation can be a factor that strengthens sociability and could even represent a practical finding into the nature of what creates a social online learning environment by laying the initial ground-work needed for sociability to develop.

Using information from RQ2, the adapted model was further added to. Best practices examples within the two cases were actively sought out and organized, leading to them being listed in Figure 4. Figure 4 features a list of notable themes that were consistent across both case studies. The themes formatted in italics and having a grey colour are less strongly shown across both cases.

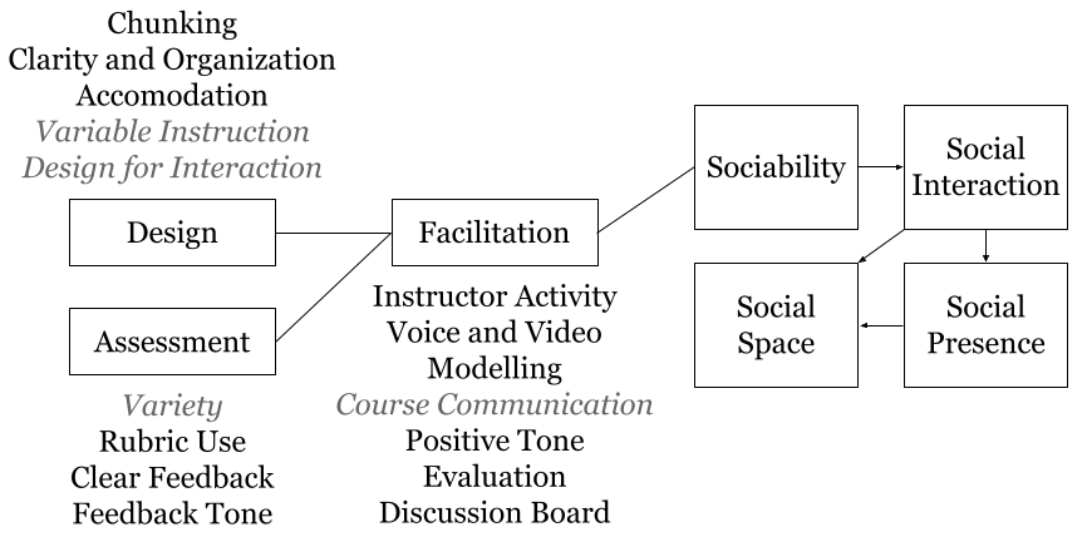

Fig. 4. The adapted SIPS model (Weidlich & Bastiaens, 2019) proposed by this research, informed by Research Question 2.

Strong themes consistent within the two cases are noted along with their category. The strongest design themes that emerged were 'chunking' a course into weekly content and modules, the use of clarity and organisation, and the focus on student accommodation.. Variable instruction and designing for interaction received some support across both cases. For assessment; rubric use, clear feedback, and the tone used in feedback are consistent across both cases. Variety of assessments show only some support within both cases together. Within facilitation; instructor activity, voice and video use, modelling, positive tone were the most prevalent themes. Course communication showed some support with consistent course-wide announcements, but not high levels of use across both cases together.

Table 6 featured two themes that were not placed within Figure 4, alongside two themes added to a category. I did not place rapid feedback and timely response on this model, as only one case had suitably timely feedback and responses. Prior research informed this judgement, with the working definition of 'timely feedback and responses' judged as those given within seven days (Martin et al., 2018). I added evaluation and discussion board use to 'facilitation', as its use ties into the conveyance of the course in the present the most. This differs from previous research by Martin et al., (2019) that grouped assessment and

evaluation, for the reason that evaluation, when examined in this research, could only be noted through facilitation by means of the distribution of surveys and interaction with students. I saw a prominent use of discussion boards throughout both cases as an important element of assessment, while I saw evaluation through a level of survey use within both classes to evaluate the course, with one class showing much heavier use than the other.

The adapted model was modified to show the evidence gained as part of this research and through this we can identify that it may be possible that social elements are not a completely independent construct from the construct of best practices. Social elements may instead be linked together with best practice aligned with a category of best practice, such as facilitation (Camacho & Legare, 2021; Greenhow & Galvin, 2020; Martin et al., 2019). This thought receives support from Case Study 2, which was not designed for social interaction yet remains highly rated by students. Furthermore, within the two case studies, facilitation and sociability both had median and interquartile range scores that implied that students agreed with their presence. This was consistent with the same scores of the greater sample. Whereas each other element showed some level of divergence from the greater sample or discrepancy between the case studies, this consistency lends a level of strength to both facilitation and sociability, as well as their potential connection together — to remain stable while the others had not.

Limitations

Drawing upon the research by Martin et al. (2019), other factors that underscore and influence the design, facilitation, assessment and evaluation of a course were not examined and weighed. These factors can include institutional factors such as infrastructure, technology access, the presence of a technical team and support, lack of communication or support at a higher level, to skills factors such as limited computer literacy or technology competency, a lack of developed understanding relating to the creation of an online course, to cultural factors such as a negative attitude regarding new tools and technology or related to the transition (Wasfy et al., 2021; Geiger et al., 2018; O'Doherty et al., 2018; van Rensburg, 2018). Many of these factors can influence the design of courses and the outcomes

of students. For example, limited computer literacy among students would require a redesign of the course to accommodate and simplify layout and navigation and thus influence design, while limited access to technology would require alterations to the facilitation of a course to deliver its content and the instructor's support in different ways and through different channels.

Along a similar vein, a variety of factors influence students themselves and their learning and outcomes, and not all of them relate to a learning environment's ability to function as a sound social environment. Awkwardness and difficulty with technology, limited access to internet and technology, human differences (ex. persons with disabilities), limited support or assistance and difficulty balancing work and study (Carrillo & Flores, 2020; Mullen, 2020; Fermin-Gonzalez, 2019; Roddy et al., 2017). Likewise, the concept of a universal requirement for a learning environment to function as a social space may not be complete and total. Some students may meet their interaction needs outside of the virtual classroom and instead remain purely task-oriented without social considerations (Borup et al., 2020; Vigo-Arranzola & Dieste-Gracia, 2019). Additionally, some students may develop other pathways toward receiving their needed social presence without as much need for direct interaction or sustained and direct social interaction (Bastiaens & Weidlich, 2022; Castro, 2019). The SIPS model itself may not show consistent strength in all use cases as well, and may depend heavily on the communication skills and openness to social interaction of the participants in an online class (Göksün, 2020). Social influences and factors are myriad and it's unrealistic to expect one tool or theoretical model to encompass the entirety of human social interactions.

Other research into this topic may be able to gain more information through using personal interviews as an additional qualitative data source while the establishment of a control group to have a sense for just how different these student-nominated 'best' online classes are from the baseline of online classes would deepen the value of the qualitative data received. Other researchers may use interviews of students and instructors in addition to document analysis and surveying to provide details that these methods alone did not convey.

For example, forming a more vivid sense of how an instructor communicated privately with a learner along with the rationale underscoring that interaction and the instructor's strategies for it aren't as able to be discerned with this research's methods without direct interviewing. This is relevant, as other research has identified personal communication and the tone used therein as an important element of best practice (Camacho & Legare, 2021; Hicks et al., 2019; Foster et al., 2018). Within further research, a control group to establish just how much online courses viewed as effective differ from those that are not would be useful in gauging the differences between classes using social elements and best practices. An analysis of outcomes such as satisfaction and academic performance would also be useful to gauge the differences between these two groups to prove the merit of an increased focus on the quality of online learning.

The inclusion of the survey questions used in this research within the larger OH2BH questionnaire posed challenges due to space limitations required for the number of questions, as well as for potential mistakes made by surveyed students that influence a complete understanding of campus distribution. Space limitations for permitted questions within the OH2BH questionnaire prevented the use of a full-length questionnaire on the SIPS model elements as used within Weidlich and Bastiaens' 2019 study, as well as a longer surveying of best practice elements. This smaller form of survey may have altered or skewed the results as it lacks a comprehensive break-down of best practice elements and SIPS model components.

I did not look into 'evaluation' as a major topic within this research despite being a theme within Martin et al.'s (2019) research owing to the view that it is an iterative process of improving a course over time by taking and using feedback and improving upon one's own practice. Future researchers may be able to examine a singular course over time to have a better understanding of its changes and improvements, as well as the characteristics of its students. This longitudinal examination of a course unbound by a singular semester may yield interesting insights and highlights into what students may judge as an 'effective' course, as well. It may be able to determine if a particular course emerges as one that different

groups of students view as ‘effective’, rather than a singular group in a bounded period of time. Research can then look into if elements of changes, applied feedback, and dynamic aspects of a course may contribute to that consistent choosing of this class.

Recommendations

Recommendations for Educators

Within online courses seen as ‘effective’, we could identify a variety of practices, and these practices may be useful for educators to keep in mind when designing and conveying their online courses. These practices are:

- Clear organisation across each week of the class, with each week broken down into its own section containing assignments, activities and content.
- Breaking down the course into weekly subsections that contain activities, assignments and content that had clear direction and explanation, with available rubrics, visible deadlines and reminders.
- Frequent announcements given each week or every two weeks to communicate with the class, give reminders, additional information, examples, and support. An instructor should use a friendly and supportive tone within these communications.
- Making opportunities for students to meet synchronously with the instructor to ask questions and receive guidance and support.

I recommend educators to have an understanding of pre-existing best practices in online learning as well, using prior knowledge into design, facilitation and assessment to help guide the creation of their online learning course, with evaluation used to improve that course over time.

Additionally, an instructor should favour a level of flexibility within online learning, a willingness to adjust or pivot a design to benefit and accommodate the students of the class, as no ‘one size fits all’ method may exist for online learning (Mehigan et al., 2023). It is important to consider that an asynchronous online class is not a ‘worse’ online learning environment, but a different one, requiring different focuses and skills (Camacho & Legare,

2021). An open mind and willingness to learn and improve the learning environment iteratively are useful qualities towards this end.

Recommendations for Researchers

To better understand online learning and optimal ways to convey it to students, we would need further research to better understand the role, perceived importance, effects, and most importantly, methods to design social elements into online learning. A better practical understanding of social elements in online learning may be able to help reduce problems seen within this modality, in terms of alienation and isolation that result in poorer learner outcomes (Mehigan et al., 2023; Wei et al., 2012). From the results of this research, several questions come to mind:

- What can we learn more about the role of facilitation when it's tied to the SIPS model?
- What else can we uncover about facilitation and its role in social online learning environment formation?
- Can we draw comparisons across different institutions with their own goals, focuses and delivery of online learning?
- Outside of Brightspace used at Lakehead University, what do other methods and platforms of online learning offer in terms of design and delivery of online learning?
- Do other methods and platforms of online learning provide unique affordances that benefit the space as a social environment (Braun et al., 2020)?
- What can we learn when we use a similar method of examining online learning, but also mixed with additional data sources like that of interviewing and long-form surveys?
- What can we learn when we examine a case study of student-nominated 'effective' classes alongside a 'control' class? How do their characteristics differ?
- What information could we glean when we examine an online class through the lens of student achievement rather than as a class a student saw as 'effective'?

Online learning is a rich and relatively 'new' area of study. Though past research exists regarding the space, that research oftentimes had a disconnect from the practical realm and/or a negative or dismissive tone of online learning. This burgeoning and sincere focus on the practical delivery of online learning was accelerated by the COVID-19 pandemic and forcible switch to online learning experienced by many – and now creates many gaps and areas that are ripe for exploration and discovery.

Conclusion

This research yields three key insights. Firstly, social elements and best practices are co-present within online classes viewed by students at Lakehead University as 'effective'. Even with this presence of both elements, students experienced the lack of a strong perception of social presence itself, the feeling as though they are interacting with 'real' salient social actors (Weidlich & Bastiaens, 2019). This is a problem that can detract from the learning experience of students (Phinrangee & Malac, 2017; Bowers & Kumar, 2015).

Secondly, the two different case study courses selected after being judged as 'effective' by Lakehead University students showcased consistent themes. Both featured clear organisation of the class by week, with assignments, activities, and content contained within these weeks. Assignments, activities and content had clear direction and explanation, with available rubrics and visible deadlines and reminders. The case study courses used announcements throughout the course to communicate to students, give reminders, additional information, examples, and support in a friendly and supportive tone. The instructors of the case study courses put opportunities forth in which students may meet synchronously with the instructor to receive personal guidance and assistance.

Lastly, further research is required to better understand the role of social elements in online learning alongside what is being identified as understood best practices within online learning. There may not be a 'one size fits all' approach to online learning, and social elements themselves may constitute just one element of a greater series of design best practices for online learning. Individual differences may also play a role. The case studies examined within this research were both seen as effective by students despite showing

dramatic differences in design and focus, possibly pointing at different groups of students in each class in terms of what they would prefer in their online learning environments. The greater variety of online courses may also play a role in a student's meeting of social requirements. Even if they can't meet their social needs in one class, they may do so in other classes within their schedule, as students are often taking several online courses at a time. A holistic examination of a student's online courses and what type of value they provide to them may reveal more regarding this potential effect. The 'best' may not be an individual course, but the 'best variety' of courses available to a student – allowing them the choice of picking courses that meet what they might need.

Beyond these initial insights, this research's findings point specifically to the element of effective facilitation. The findings note that facilitation is an important element of the conveyance of online learning and may serve as a connection point to the creation of social online learning environments that benefit students and instructors (Carrillo & Flores, 2020). It is possible from the findings of this research that facilitation serves as a type of 'key', an element that should receive focus when designing a class. It's possible to re-frame design in this way, to consider design under the framework of 'designing for interaction', for building into the design at its heart a focus on that interaction, a selection of content and activities that reinforce it, and a focus on being able to provide feedback, communications and presence to reinforce it.

Another note of importance and a level of vindication for those that believe in the potential of asynchronous online learning such as myself is the finding that students voted for predominantly asynchronous classes (f = 33, 54.1%) as what they felt was 'effective online learning', despite the fact that they could have chosen hybrid or synchronous courses instead. This directly opposes one of the concepts that haunted virtual communication throughout 2010s and prior era research, presenting a negative and dismissive view of virtual interaction — Information Richness Theory (Daft et al., 1987). This theory viewed different types of communication under a hierarchy of 'richness' that depended on how close to face-to-face communication it was as it began with the premise that face-to-face

communication had the strongest ability to transmit social cues and receive an immediate response. Under this theory, virtual communications was at the lowest end of that hierarchy of richness. This theory can only receive further scrutiny under the preference towards asynchronous communication, alongside the possibility of others feeling social presence and deeper connectedness around them in an online and supposedly 'less rich' space.

It's valuable to continue working on online learning. Not to look at the receding of the COVID-19 crisis and wash one's hands of online learning and return to in-person teaching without internalizing the lessons learned. What we are learning and exploring now is valuable for the future and our increasingly globalized and interconnected world. By devoting time, effort and work to understanding the virtual as a medium, as a space for interaction and as one capable of possessing meaning and value, we can help create enriching experiences and meaningful spaces. It isn't an easy thing to do, especially for those that are older and used to classical views of teaching and learning, but the rewards of exploring this medium can help in a myriad of ways, can help reach students and individuals that often have difficulty with traditional teaching methods, and can enhance our understanding of teaching itself (Phirangee & Malec, 2017; Bowers & Kumar, 2015, Zhan & Mei, 2013). It is my view that the online classroom and the virtual worlds beyond it drip with so much to be discovered and explored. In many ways, the online space is an unexplored horizon of our own making.

References

Acevedo, M. A. (2020). Teaching quantitative ecology online: An evidence-based prescription of best practices. *Ecology and Evolution*, *10*(22), 12457–12464. https://doi.org/10.1002/ece3.6607

Akcaoglu, M., & Lee, E. (2018). Using Facebook groups to support social presence in online learning. *Distance Education*, *39*(3), 334–352. https://doi.org/10.1080/01587919.2018.1476842

Alenezi, A. R. (2022). Modeling the Social Factors Affecting Students' Satisfaction with Online Learning: A Structural Equation Modeling Approach. *Education Research International*, *2022*, 1–13. https://doi.org/10.1155/2022/2594221

Ashrafi, A., Zareravasan, A., Savoji, S. R., & Amani, M. (2022). Exploring factors influencing students' continuance intention to use the learning management system (LMS): A multi-perspective framework. *Interactive Learning Environments*, *30*(8), 1475–1497. https://doi.org/10.1080/10494820.2020.1734028

Baber, H. (2022). Social interaction and effectiveness of the online learning—A moderating role of maintaining social distance during the pandemic COVID-19. *Asian Education and Development Studies*, *11*(1), 159–171. https://doi.org/10.1108/AEDS-09-2020-0209

Barbour, M. K. (2011). The Promise and the Reality: Exploring Virtual Schooling in Rural Juristictions. *Education in Rural Australia*, *21*(1), 1–19.

Bartley, S. J., & Golek, J. H. (2004). Evaluating the Cost Effectiveness of Online and Face-to-Face Instruction. *Journal of Educational Technology & Society*, *7*(4), 167–175. JSTOR.

Bastiaens, T. J., & Weidlich, J. (2022). Pathway to presence: An investigation of ambient awareness in online learning environments. *Interactive Learning Environments*, *30*(2), 262–275. https://doi.org/10.1080/10494820.2019.1651746

Bentley, K. J., Secret, M. C., & Cummings, C. R. (2015). The Centrality of Social Presence in Online Teaching and Learning in Social Work. *Journal of Social Work Education*, *51*(3), 494–504. https://doi.org/10.1080/10437797.2015.1043199

Bickle, J. T., Hirudayaraj, M., & Doyle, A. (2019). Social Presence Theory: Relevance for HRD/VHRD Research and Practice. *Advances in Developing Human Resources*, *21*(3), 383–399. https://doi.org/10.1177/1523422319851477

Bingham, A.J., & Witkowsky, P. (2022). Deductive and inductive approaches to qualitative data analysis. In C. Vanover, P. Mihas, & J. Saldaña (Eds.), *Analyzing and interpreting qualitative data: After the interview* (pp. 133-146). SAGE Publications.

Borup, J., Graham, C. R., West, R. E., Archambault, L., & Spring, K. J. (2020). Academic Communities of Engagement: An expansive lens for examining support structures in blended and online learning. *Educational Technology Research and Development*, *68*, 807–832. https://doi.org/10.1007/s11423-020-09744-x

Bowers, J., & Kumar, P. (2015). Students' Perceptions of Teaching and Social Presence: A Comparative Analysis of Face-to-Face and Online Learning Environments. *International Journal of Web-Based Learning and Teaching Technologies*, *10*(1), 27-44. http://doi.org.ezproxy.lakeheadu.ca/10.4018/ijwltt.2015010103

Braun, S., Davitti, E., & Slater, C. (2020). 'It's like being in bubbles': Affordances and challenges of virtual learning environments for collaborative learning in interpreter education. *The Interpreter and Translator Trainer*, *14*(3), 259–278. https://doi.org/10.1080/1750399X.2020.1800362

Camacho, D. J., & Legare, J. M. (2021). Pivoting to online learning—The future of learning and work. *The Journal of Competency-Based Education*, *6*(1), e1239. https://doi.org/10.1002/cbe2.1239

Carrillo, C., & Flores, M. A. (2020). COVID-19 and teacher education: A literature review of online teaching and learning practices. *European Journal of Teacher Education*, *43*(4), 466–487. https://doi.org/10.1080/02619768.2020.1821184

Castro, L. F. (2019). Social Presence in an Online Professional Conference. *TechTrends*, *63*, 408–419. https://doi.org/10.1007/s11528-019-00382-6

Cerniglia, E. G. (2011). Modeling Best Practice through Online Learning: Building Relationships. *YC Young Children*, *66*(3), 54–59.

Cobb, C. A., Watson, C. T., & Ellis, S. R. (2018). Establishing Best Practices for Effective Online Learning Modules: A Single Institution Study. *Medical Science Educator*, *28*, 683–691. https://doi.org/10.1007/s40670-018-0613-7

Daft, R. L., Lengel, R. H., & Trevino, L. K. (1987). Message Equivocality, Media Selection, and Manager Performance: Implications for Information Systems. *MIS Quarterly*, *11*(3), 355–366. JSTOR. https://doi.org/10.2307/248682

Davey, B., Elliott, K., & Bora, M. (2019). Negotiating pedagogical challenges in the shift from face-to-face to fully online learning: A case study of collaborative design solutions by learning designers and subject matter experts. *Journal of University Teaching & Learning Practice*, *16*(1), 26–46. https://doi.org/10.53761/1.16.1.3

Fermín-González, M. (2019). Research on Virtual Education, Inclusion, and Diversity: A Systematic Review of Scientific Publications (2007–2017). *International Review of Research in Open and Distance Learning*, *20*(5), 146–167. https://doi.org/10.19173/irrodl.v20i5.4349

Fisher, D., Frey, N., & Hattie, J. (2020). *The Distance Learning Playbook, Grades K-12: Teaching for Engagement and Impact in Any Setting*. Corwin.

Flavian, C., Guinalíu, M., & Jordan, P. (2019). Antecedents and consequences of trust on a virtual team leader. *European Journal of Management and Business Economics*, *28*(1), 2–24. https://doi.org/10.1108/EJMBE-11-2017-0043

Foster, L., Colburn, A. N., & Briggs, C. (2018). Language & Online Learning: Inform, Inspire and Engage Virtual Learning Communities. *The Journal of Counselor Preparation and Supervision*, *11*(1). https://repository.wcsu.edu/jcps/vol11/ iss1/6

Garrison, D. R., Anderson, T., & Archer, W. (1999). Critical Inquiry in a Text-Based Environment: Computer Conferencing in Higher Education. *The Internet and Higher Education*, *2*(2), 87–105. https://doi.org/10.1016/S1096-7516(00)00016-6

Geiger, V., Mulligan, J., Date-Huxtable, L., Ahlip, R., Jones, D. H., May, E. J., Rylands, L., & Wright, I. (2018). An interdisciplinary approach to designing online learning: Fostering pre-service mathematics teachers' capabilities in mathematical modelling. *ZDM*, *50*, 217–232. https://doi.org/10.1007/s11858-018-0920-x

Gillett-Swan. (2017). The Challenges of Online Learning: Supporting and Engaging the Isolated Learner. *Journal of Learning Design, 10*(1), 20–30. https://doi.org/10.5204/jld.v9i3.293

Göksün, D. O. (2020). Predictors of Perceived Learning in a Distance Learning Environment from the Perspective of SIPS Model. *International Journal of Human–Computer Interaction*, *36*(10), 941–952. https://doi.org/10.1080/10447318.2019.1700643

Gravetter, F. J., Wallnau, L. B., Forzano, L. B., & Witnauer J. E. (2021). *Essentials of Statistics for the Behavioral Sciences* (10th ed.). Cengage Learning.

Greenhow, C., & Galvin, S. (2020). Teaching with social media: Evidence-based strategies for making remote higher education less remote. *Information and Learning Science*, *121*(7/8), 513–524. ABI/INFORM Global. https://doi.org/10.1108/ILS-04-2020-0138

Gui, H.-C., Wong, S. S.-L., Ahmad Zaini, A., & Goh, N. A. (2021). Online learning amidst covid-19 pandemic—Explicating the nexus between learners' characteristics, their learning environment and the learning outcomes in built environment studies. *Interactive Learning Environments*, *ahead-of-print*(ahead-of-print), 1–12. https://doi.org/10.1080/10494820.2021.1978504

Hansen-Brown, A., Sullivan, S., Jacobson, B., Holt, B., & Donovan, S. (2022). College Students' Belonging and Loneliness in the Context of Remote Online Classes during

the COVID-19 Pandemic. *Online Learning (Newburyport, Mass.)*, *26*(4), 323. https://doi.org/10.24059/olj.v26i4.3123

Hicks, N., Gray, D. M., & Bond, J. (2019). A Blueprint for Executing Instructor-Student Interactions in the Online Classroom Using Marketing Touchpoints. *Journal of Educators Online*, *16*(1). https://eric.ed.gov/?id=EJ1204373

Icke, A. (2017). Creating, Completing and Critiquing Our First MOOC. *IASL Annual Conference Proceedings*. https://doi.org/10.29173/iasl7161

Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using Mixed-Methods Sequential Explanatory Design: From Theory to Practice. *Field Methods*, *18*(1), 3–20. https://doi.org/10.1177/1525822X05282260

Kear, K., Chetwynd, F., & Jefferis, H. (2014). Social presence in online learning communities: The role of personal profiles. *Research in Learning Technology*, *22*(1). https://doi.org/10.3402/rlt.v22.19710

Kotzee, B., & Palermos, S. O. (2021). The Teacher Bandwidth Problem: MOOCs, Connectivism, and Collaborative Knowledge. *Educational Theory*, *71*(4), 497–518. https://doi.org/10.1111/edth.12495

Krebs, C. A., Kuhn, S. A. C., Brewer, A. T., & Diller, J. W. (2021). Using Interteaching to Promote Online Learning Outcomes. *Journal of Behavioral Education*. https://doi.org/10.1007/s10864-021-09434-5

Kreijns, K. (2004). *Sociable CSCL Environments: Social Affordances, Sociability, and Social Presence*. [Doctoral dissertation, Open Universiteit Nederland]. Datawyse/Universitaire Pers Maastricht.

Kreijns, K., Kirschner, P. A., Jochems, W., & van Buuren, H. (2007). Measuring perceived sociability of computer-supported collaborative learning environments. *Computers & Education, 49*(2), 176–192. https://doi.org/10.1016/j.compedu.2005.05.004

Kreijns, K., Kirschner, P. A., & Vermeulen, M. (2013). Social Aspects of CSCL Environments: A Research Framework. *Educational Psychologist*, *48*(4), 229–242. https://doi.org/10.1080/00461520.2012.750225

Lagat, K. T., & Concepcion, G. L. (2022). Students' Social Interaction, Collaborative Learning, and Perceived Learning in an Online Learning Environment. *International Journal of Social Science Research and Review*, *5*(1), 24–33. https://doi.org/10.47814/ijssrr.v5i1.130

Lakehead University (2023a). *Campus Highlights*. https://www.lakeheadu.ca/campus-life/discover-lakehead/campus-highlights

Lakehead University (2023b). *Immersive Telepresence Classrooms*. https://www.lakeheadu.ca/faculty-and-staff/departments/services/helpdesk/multimedia/immersive-telepresence-classrooms

Lakehead University (2023c). *Institutional Rankings*. https://www.lakeheadu.ca/about/institutional-rankings

Lakehead University (2023d). *myCourselink*. https://www.lakeheadu.ca/faculty-and-staff/departments/services/helpdesk/portals/mycourselink

Lapidot-Lefler, N. (2022). Promoting the use of Social-Emotional Learning in Online Teacher Education. *International Journal of Emotional Education*, *14*(2), 19–35. Coronavirus Research Database; Nursing & Allied Health Premium; Publicly Available Content Database; Sociology Collection. https://doi.org/10.56300/HSZP5315

Lasfeto, D. B., & Ulfa, S. (2020). The relationship between self-directed learning and students' social interaction in the online learning environment. *Je-LKS*, *16*(2), 34–41. https://doi.org/10.20368/1971-8829/1135078

Lee, D. (2021). The process of designing for [online] learning: Response to Bennett et al. *Educational Technology Research and Development*, *69*(1), 289–293. https://doi.org/10.1007/s11423-020-09915-w

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology, 22*(140), 5–55.

Mardi, F. H. (2019). How to create meaningful learning experiences in an online environment: Components from coding student reflections. *Research on Education and Media*, *11*(1), 50–62. https://doi.org/10.2478/rem-2019-0008

Martin, F., Wang, C., & Sadaf, A. (2018). Student perception of helpfulness of facilitation strategies that enhance instructor presence, connectedness, engagement and learning in online courses. *The Internet and Higher Education*, *37*, 52–65. https://doi.org/10.1016/j.iheduc.2018.01.003

Martin, F., Ritzhaupt, A., Kumar, S., & Budhrani, K. (2019). Award-winning faculty online teaching practices: Course design, assessment and evaluation, and facilitation. *The Internet and Higher Education*, *42*, 34–43. https://doi.org/10.1016/j.iheduc.2019.04.001

Martin, F., Bacak, J., Polly, D., & Dymes, L. (2023a). A systematic review of research on K12 online teaching and learning: Comparison of research from two decades 2000 to 2019. *Journal of Research on Technology in Education*, *55*(2), 190–209. https://doi.org/10.1080/15391523.2021.1940396

Martin, F., Kumar, S., Ritzhaupt, A. D., & Polly, D. (2023b). Bichronous online learning: Award-winning online instructor practices of blending asynchronous and synchronous online modalities. *The Internet and Higher Education*, *56*, 100879. https://doi.org/10.1016/j.iheduc.2022.100879

Mason, R. (2000). From distance education to online education. *The Internet and Higher Education*, *3*(1), 63–74. https://doi.org/10.1016/S1096-7516(00)00033-6

McKim, C. A. (2017). The Value of Mixed Methods Research: A Mixed Methods Study. *Journal of Mixed Methods Research*, *11*(2), 202–222. https://doi.org/10.1177/1558689815607096

Mehigan, S., Cenarosa, A. S., Smith, R., Zvavamwe, M., & Traynor, M. (2023). Engaging perioperative students in online learning: Human factors. *Journal of Perioperative Practice*, *33*(1–2), 4–8. https://doi.org/10.1177/17504589221107227

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative Research: A Guide to Design and Implementation* (4th ed.). Jossey-Bass.

Mullen, C. A. (2020). Does modality matter? A comparison of aspiring leaders' learning online and face-to-face. *Journal of Further and Higher Education*, *44*(5), 670–688. https://doi.org/10.1080/0309877X.2019.1576859

Nguyen, T., Netto, C. L. M., Wilkins, J. F., Broker, P., Vargas, E. E., Sealfon, C. D., Puthipiroj, P., Li, K. S., Bowler, J. E., Hinson, H. R., Pujar, M., & Stein, G. M. (2021). Insights Into Students' Experiences and Perceptions of Remote Learning Methods: From the COVID-19 Pandemic to Best Practice for the Future. *Frontiers in Education (Lausanne)*, *6*. https://doi.org/10.3389/feduc.2021.647986

O'Doherty, D., Dromey, M., Lougheed, J., Hannigan, A., Last, J., & McGrath, D. (2018). Barriers and solutions to online learning in medical education – an integrative review. *BMC Medical Education*, *18*(130). https://doi.org/10.1186/s12909-018-1240-0

Oyarzun, B. & Martin, F. (2023). A systematic review of research on online learner collaboration from 2012-21: Collaboration technologies, design, facilitation, and outcomes. *Online Learning, 27*(1), 71-106. https://doi.org/10.24059/olj.v27i1.3407

Phirangee, K. (2016). Students' Perceptions of Learner-Learner Interactions that Weaken a Sense of Community in an Online Learning Environment. *Online Learning (Newburyport, Mass.), 20*(4), 13. https://doi.org/10.24059/olj.v20i4.1053

Phirangee, K., & Malec, A. (2017). Othering in online learning: An examination of social presence, identity, and sense of community. *Distance Education*, *38*(2), 160–172. https://doi.org/10.1080/01587919.2017.1322457

Pregowska, A., Masztalerz, K., Garlińska, M., & Osial, M. (2021). A Worldwide Journey through Distance Education—From the Post Office to Virtual, Augmented and Mixed Realities, and Education during the COVID-19 Pandemic. *Education Sciences*, *11*(3). https://doi.org/10.3390/educsci11030118

Quintana, R. M., & Tan, Y. (2019). Characterizing MOOC Pedagogies: Exploring Tools and Methods for Learning Designers and Researchers. *Online Learning (Newburyport, Mass.)*, *23*(4), 62. https://doi.org/10.24059/olj.v23i4.2084

Ritonga, M., Lahmi, A., Saputra, R., . M., & . N. (2022). Online Learning During the Covid-19 Pandemic Period: Studies on the Social Presence and Affective and Cognitive Engagement of Students. *International Journal of Early Childhood Special Education*, *14*(1), 479–486. https://doi.org/10.9756/INT-JECSE/V14I1.221058

Roddy, C., Amiet, D. L., Chung, J., Holt, C., Shaw, L., McKenzie, S., Garivaldis, F., Lodge, J. M., & Mundy, M. E. (2017). Applying Best Practice Online Learning, Teaching, and Support to intensive Online environments: An integrative Review. *Frontiers in Education*, *2*(59). https://doi.org/10.3389/feduc.2017.00059

Sarwono, S., Sudarmiani, S., & Nugraha, N. (2022). Students' Alienation in OnlineLearning: A Phenomenological Study in Sociology Subject. *AL-ISHLAH: Jurnal Pendidikan, 14*(4), 4907–4918. https://doi.org/10.35445/alishlah.v14i4.2019

Savci, C., Cil Akinci, A., & Keles, F. (2022). The association of perceived sociability and social intelligence with loneliness in online learning among nursing students. *Nurse Education Today*, *109*, 105226. https://doi.org/10.1016/j.nedt.2021.105226

Schultz, R. B., & DeMers, M. N. (2020). Transitioning from Emergency Remote Learning to Deep Online Learning Experiences in Geography Education. *Journal of Geography (Houston)*, *119*(5), 142–146. https://doi.org/10.1080/00221341.2020.1813791

Sjølie, E., Espenes, T. C., & Buø, R. (2022). Social interaction and agency in self-organizing student teams during their transition from face-to-face to online learning. *Computers and Education*, *189*, 104580. https://doi.org/10.1016/j.compedu.2022.104580

Tanis, C. J. (2020). The seven principles of online learning: Feedback from faculty and alumni on its importance for teaching and learning. *Research in Learning Technology*, *28*. https://doi.org/10.25304/rlt.v28.2319

Taranilla, R. V., Cózar-Gutiérrez, R., González-Calero, J. A., & López Cirugeda, I. (2022). Strolling through a city of the Roman Empire: An analysis of the potential of virtual reality to teach history in Primary Education. *Interactive Learning Environments*, *30*(4), 608–618. https://doi.org/10.1080/10494820.2019.1674886

van Rensburg, E. S. J. (2018). Effective online teaching and learning practices for undergraduate health sciences students: An integrative review. *International Journal of Africa Nursing Sciences*, *9*, 73–80. https://doi.org/10.1016/j.ijans.2018.08.004

Vargas-Madriz, L. F. (2018). Experiences of Online Closeness in Virtual Learning Environments (VLEs). *Indo-Pacific Journal of Phenomenology*, *18*(2). https://doi.org/10.1080/20797222.2018.1507350

Vigo-Arrazola, B., & Dieste-Gracia, B. (2019). Building virtual interaction spaces between family and school. *Ethnography and Education*, *14*(2), 206–222. https://doi.org/10.1080/17457823.2018.1431950

Vrieling-Teunter, E., Henderikx, M., Nadolski, R., & Kreijns, K. (2022). Facilitating Peer Interaction Regulation in Online Settings: The Role of Social Presence, Social Space and Sociability. *Frontiers in Psychology*, *13*. https://www.frontiersin.org/articles/10.3389/fpsyg.2022.793798

Wasfy, N. F., Abouzeid, E., Nasser, A. A., Ahmed, S. A., Youssry, I., Hegazy, N. N., Shehata, M. H. K., Kamal, D., & Atwa, H. (2021). A guide for evaluation of online

learning in medical education: A qualitative reflective analysis. *BMC Medical Education*, *21*(1), 339. https://doi.org/10.1186/s12909-021-02752-2

Wei, C. W., Chen, N. S., & Kinshuk (2012). A model for social presence in online classrooms. *Educational Technology Research and Development, 60*(3), 529–545. https://doi.org/10.1007/s11423-012-9234-9

Weidlich, J., & Bastiaens, T. J. (2017). Explaining social presence and the quality of online learning with the SIPS model. *Computers in Human Behavior*, *72*(2017), 479–487. https://doi.org/10.1016/j.chb.2017.03.016

Weidlich, J., Kreijns, K., Rajagopal, K., & Bastiaens, T. (2018). What Social Presence is, what it isn't, and how to measure it: A work in progress. In T. Bastiaens, J. Van Braak, M. Brown, L. Cantoni, M. Castro, R. Christensen, G. Davidson-Shivers, K. DePryck, M. Ebner, M. Fominykh, C. Fulford, S. Hatzipanagos, G. Knezek, K. Kreijns, G. Marks, E. Sointu, E. Korsgaard Sorensen, J. Viteli, J. Voogt, P. Weber, E. Weippl & O. Zawacki-Richter (Eds.), *Proceedings of EdMedia: World Conference on Educational Media and Technology* (pp. 2142-2150). Amsterdam, Netherlands: Association for the Advancement of Computing in Education (AACE).

Weidlich, J., & Bastiaens, T. J. (2019). Designing sociable online learning environments and enhancing social presence: An affordance enrichment approach. *Computers & Education*, *142*(2019). https://doi.org/10.1016/j.compedu.2019.103622

Weidlich, J., Kreijns, K., & Bastiaens, T. J. (2021). Individual Differences in Perceptions of Social Presence: Exploring the Role of Personality in Online Distance Learning. *Open Education Studies, 3*(1), 188–201. https://doi.org/10.1515/edu-2020-0153

Bastiaens, T. J., & Weidlich, J. (2022). Pathway to presence: An investigation of ambient awareness in online learning environments. *Interactive Learning Environments*, *30*(2), 262–275. https://doi.org/10.1080/10494820.2019.1651746

Zhan, Z., & Mei, H. (2013). Academic self-concept and social presence in face-to-face and online learning: Perceptions and effects on students' learning achievement and

satisfaction across environments. *Computers & Education*, *69*, 131–138. https://doi.org/10.1016/j.compedu.2013.07.002

Appendix A

REB Approval Letter

Lakehead UNIVERSITY

Research Ethics Board
t: (807) 343-8283
research@lakeheadu.ca

May 16, 2023

Principal Investigator: Dr. Christina van Barneveld
Student Investigator: Julian David Rossi
Faculty of Education
Lakehead University

Dear Dr. van Barneveld and Julian:

Re: Romeo File No: 1469781
Granting Agency: N/A
Agency Reference #: N/A

On behalf of the Research Ethics Board, I am pleased to grant ethical approval to your research project titled, "Online Learning as a Social Environment - Towards the Refinement of Practice".

Ethics approval is valid until May 16, 2024. Please submit a Request for Renewal to the Office of Research Services via the Romeo Research Portal by April 16, 2024 if your research involving human participants will continue for longer than one year. A Final Report must be submitted promptly upon completion of the project. Access the Romeo Research Portal by logging into myInfo at:

https://erpwp.lakeheadu.ca/

During the course of the study, any modifications to the protocol or forms must not be initiated without prior written approval from the REB. You must promptly notify the REB of any adverse events that may occur.

Best wishes for a successful research project.

Sincerely,

Dr. Claudio Pousa
Chair, Research Ethics Board

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