

St. Cloud State University  
**theRepository at St. Cloud State**

---

Culminating Projects in Information Media

Department of Information Media

---

8-2020

## Fostering Students' Sense of Belonging in Online Asynchronous Courses through Social Media

Shah R. Khan

St. Cloud State University, [srkhan@go.stcloudstate.edu](mailto:srkhan@go.stcloudstate.edu)

Follow this and additional works at: [https://repository.stcloudstate.edu/im\\_etds](https://repository.stcloudstate.edu/im_etds)

---

### Recommended Citation

Khan, Shah R., "Fostering Students' Sense of Belonging in Online Asynchronous Courses through Social Media" (2020). *Culminating Projects in Information Media*. 27.

[https://repository.stcloudstate.edu/im\\_etds/27](https://repository.stcloudstate.edu/im_etds/27)

This Starred Paper is brought to you for free and open access by the Department of Information Media at theRepository at St. Cloud State. It has been accepted for inclusion in Culminating Projects in Information Media by an authorized administrator of theRepository at St. Cloud State. For more information, please contact [tdsteman@stcloudstate.edu](mailto:tdsteman@stcloudstate.edu).

**Fostering Students' Sense of Belonging in Online Asynchronous Courses through Social  
Media**

by

Shah R. Khan

A Starred Paper

Submitted to the Graduate Faculty of

St. Cloud State University

in Partial Fulfillment of the Requirements

for the Degree of

Master of Science

in Information Media: Instructional Technology

August, 2020

Starred Paper Committee:  
Yun Claire Park, Chairperson  
Debra K Japp  
James Johnson

## Table of Contents

Chapter	Page
I. Introduction.....	6
Introduction and Background.....	6
Theoretical Framework.....	7
Research Problem .....	8
Research Questions.....	9
Significance of the Study.....	10
Limitations.....	10
Delimitations.....	11
Definition of Terms.....	11
Summary.....	12
II. Literature Review.....	14
Introduction.....	14
Methodology.....	14
Variables and Themes.....	16
Online Education.....	16
Sense of Belonging.....	18
Social Media.....	20

Chapter	Page
Gaps in Research.....	22
Summary.....	22
III. Methodology.....	24
Introduction.....	24
Institutional Review Board Exemption.....	24
Methodology.....	25
Timeline.....	26
Summary.....	27
IV. Findings.....	28
Introduction.....	28
Findings.....	28
Relationship between Sense of Belonging and Online Education.....	32
Online Education and Social Media.....	36
Summary.....	38
V. Conclusion.....	39
Introduction.....	39
Discussion of Findings.....	39

Chapter	Page
Limitations of the Study.....	40
Implications.....	41
Suggestions for Further Research.....	42
Summary.....	43
References.....	44
Appendix A.....	56

**List of Tables**

Table	Page
1. Literature Matrix.....	14
2. Summary of the Analysis of the Related Research Studies Findings.....	27

## **Chapter I: Introduction**

### **Introduction and Background**

Online education has experienced remarkable expansion and growth in recent times. It has built ample opportunities for students, faculty members, policymakers, and educational institutions by making learning accessible and effective, in particular, there has been a notable shift towards self-paced asynchronous online courses, specifically in the higher education sector which has led to a surge in investment in online education - thus altering social dimensions and emerging technologies as additional factors (Mayadas et al., 2009). Asynchronous learning has made it possible for learners to be independent of constraints such as time, place, and participation, providing opportunities for them to engage in the necessary consumption of curriculum including but not limited to group projects (Hiltz & Turoff, 2005). However, some facets of these programs have developed into a major cause for concern, such as retention rates, which have been noted 20% lower for online courses compared to traditional face-to-face courses (Ali & Leeds, 2009). Lower retention rates can be caused by various contributing factors such as a diminished sense of belonging in online courses. According to Thomas & Herbert (2014), students highly value a sense of belonging in online education.

Sense of belonging is a dynamic property which can vary from student to student depending on the personality, nature, and behavior of an individual; in the context of education, a sense of belonging refers to the extent to which students consider themselves an integral part of an institution, and feel supported and accepted by its members (Juvonen, 2006). Belonging refers to the experience of being cared for, respected, and valued by the campus community and other individuals on campus such as the faculty members and peers; it impacts students' response and performance in academics (Kim & Irwin, 2013). It can be

achieved through a productive student-faculty relationship, the presence of a well-resourced counseling center, or by encouragement of diversity and differences (O’Keeffe, 2013). Researchers have concluded that a sense of belonging is directly linked to academic success, progress, and social acceptance (Morrow & Ackermann, 2012). Integrating social media into an online course can assist instructors in fostering a sense of belonging in students; as it significantly increases the interest and self-efficacy of online learners (Jensen, 2019). The present study suggests that instructors can use social media to increase interactions and build an environment that nurtures a sense of belonging in students whilst being simultaneously capable of bridging the gap between the student and instructor. Therefore, this secondary research study will examine the role of social media in fostering a sense of belonging among online learners. Moreover, it will look at how social media can assist in impacting interpersonal interactions and fostering a sense of belonging in online education.

### **Theoretical Framework**

One of the several theories which have garnered attention in teaching and learning is the achievement goal theory, also known as goal orientation theory (Mehrdad & Zusho, 2009). The achievement-goal theory explains students’ motivation towards academic achievement (Won et al., 2018). Achievement goal theory discusses the two types of goals i.e. mastery and performance goals; the correlates of this achievement goal theory include students’ perceptions about intelligence, academic success, and engagement - which could be cognitive, emotional or behavioral, therefore to recapitulate, a sense of belonging is the most critical factor which may affect academic success in students (Anderman & Patrick, 2012). If students perceive themselves to be unaccepted or unconnected to the institution, they are more likely to drop out (Juvonen, 2006). Other research also shows that a sense of belonging



has a strong impact on the psychological and social behavior of students; it is associated with lower anxiety levels and feelings of isolation in students (Slaten et al., 2016).

The validation theory proposed by Laura Rendon examines the institutional commitments to students, perceptions of the campus climate, engagement, and involvement in the campus activities, mattering, interactions with diverse peers and sense of belonging which altogether play a vital role in the academic development of students; with an increased sense of belonging, students are more likely to participate in the learning process (Tovar, 2013). The findings from a survey regarding faculty-student relationships indicated that sense of belonging in students stems from the perception of being cared for by their peers, faculty, and other staff members (Hoffman et al., 2002).

### **Research Problem**

Online learning presents an opportunity to provide an extended frontier for higher education, in the United States alone, the number of students enrolled in distance learning has increased from 753,640 in 1995 to an estimated 6,359,121 in 2016 (Su et al., 2005; Seaman et al., 2018). Moreover, online education has also been used to increase enrollment in colleges around the United States as it is more flexible and easily accessible.

While increased enrollment is a goal from an administrative perspective other concerns may include course design, student response, and academic output; retention rates were recorded 20% lower in online courses than traditional face-to-face courses (Ali & Leeds, 2009). The average retention rate among learners in full-time online courses is 55% while in blended courses it decreases to 39%; on the other hand, the average retention rate of students in brick and mortar education is a staggering 77% and 46% in a blend of traditional and online courses respectively (Sorensen & Donovan, 2017). Online courses provide an easy access to education with lower education costs and fees, but the rate of students graduating is

lower as compared to students enrolled in traditional classrooms (Bawa, 2016). Rumberger (2001) presented 355 research reports, where student success measures and academic outcomes were determined in online and classroom delivery modes, and it was found that the rate of course completion in online courses was lower than traditional courses. Furthermore, Smith et al. (2008) measured the attrition rates among science, technology, engineering and math (STEM) and Non-STEM courses in both online and traditional classes; it was found that the drop-out rate in online STEM courses was higher than in other disciplines while the attrition rate in traditional classes was the same in all disciplines – this shows that online students experience extra challenges in online STEM courses.

In light of the literature survey, this secondary research will examine how instructors can play a role in fostering a sense of belonging with online learners in asynchronous courses. Furthermore, it will analyze how social media as an instructional tool can assist in fostering students' sense of belonging, which may also impact their motivation and learning.

### **Research Questions**

The purpose of this research is to analyze the existing literature and synthesize the strategies through which social media can be used in fostering a sense of belonging for online learners in asynchronous courses.

The primary research question that this study investigates is:

1. How can social media assist in fostering a sense of belonging in online asynchronous courses?

The sub-questions include:

- a. What is the sense of belonging in online courses? Why is it important?

- b. What is the role of social media in translating sense of belonging from face-to-face classroom to online asynchronous courses?
- c. How fostering students' sense of belonging through social media impact academic retention and completion?

### **Significance of the Study**

The recent era of tech-based education has ushered in the rapid implementation of online learning in higher education; it provides a platform to meet the student demands for flexible classes (Delahunty et al., 2014). Facilitating those who are unable to attend on-campus classes. Moreover, easier access to the internet has led to an increase in online asynchronous courses. In the United States, the growth in online distance learning continues to outpace the growth of traditional education delivery, and enrollment in these courses has steadily expanded over the past two-decades (Shackelford & Maxwell, 2012). Since the population of online learners continues to grow, it is imperative to understand how students can be proactively engaged in order to achieve academic success within this environment.

Research suggests that, due to peer engagement, a traditional face-to-face classroom provides a platform for active learning, collaboration, and community building (Arasaratnam-Smith & Northcote, 2017). This may contribute to the finding that student retention is comparatively higher than in online education (Ali & Leeds, 2009). A key finding from a research based on the experiences of students undertaking online courses was that, if instructors succeed in fostering a sense of belonging in their courses, students develop more interest, and are less inclined to withdraw from the course (Thomas & Herbert, 2014). Therefore, students' sense of belonging is critical to online education.

This secondary research notes that online education, disconnected from physical presence, can negatively impact learning, as a compensatory measure, incorporating social

media into learning contexts may contribute to a reduced sense of isolation experienced by distant learners (Delahunty et al., 2014).

### **Limitations**

The main challenges pertaining to this study arose while locating published research data and empirical studies that were focused on sense of belonging among distant learners. The term *sense of belonging* is often used with different terms and definitions. Therefore, to locate empirical research studies, other terms such as a sense of community, feeling of belonging, and group consciousness with similar definitions were used to find additional research studies. This created discrepancies whilst establishing a framework for connecting theories and concepts. Furthermore, empirical studies did not significantly cover effective strategies that could be utilized by instructors to develop better mechanisms of interaction with online learners – this may impact the efficacy of the current study with particular focus on the research questions that tackle the understanding of sense of belonging in online classrooms. Lastly, not all the research articles measure the same variables because different researchers have different ideas and strategies regarding social media and its use in online education thus impacting the consistency of results used to explore the variables in this secondary research.

### **Delimitations**

For analysis purposes, this secondary research study only utilized a selected number of empirical studies. Only research studies were used and there was no additional primary data collected to address the research questions.

## **Definition of Terms**

### ***Sense of Belonging***

It could be described as a process based on interpersonal facets and how they interact with one another to influence health, be it mental or physical (Hagerty, Williams, Coyne & Early, 1996).

### ***Online learning***

An educational tool that is based on (and accessible from) the Internet, it is the newest and most popular form of distance education today (Moore, 2011).

### ***Synchronous learning***

It refers to a learning event in which a group of students is engaged in learning at the same time. Synchronous learning is commonly supported by media such as video conferencing and chat. Learners and instructors experience synchronous learning as more social and avoid misunderstandings by asking questions and answers at the same time (Finkelstein, 2006).

### ***Asynchronous learning***

It is commonly supported by media such as email and discussion boards, support work relation between learner and teacher even when participants are not online at the same time (Hrastinski, 2008).

### ***Social Media***

It is a computer-based technology that facilitates the sharing of ideas, thoughts, and information through the building of virtual networks and communities. By design social media is internet based and gives the user quick electronic communication of content (Kietzmann et al., 2011).

## **Summary**

The key pedagogical issue in online asynchronous learning is the physical and temporal separation of the student from their instructor. An online course by its nature delivers the majority of its content virtually, therefore, eliminating the need for on-campus presence. Advanced technologies are required to appropriately address the intangible space of the virtual classroom. There are many factors and complexities that can affect an online learner's performance and academic success. However, a strong sense of belonging can result in positive retention rates and completion of online courses. Moreover, it can be deduced that social media can play a vital role in developing a sense of belonging among the students for any pedagogic endeavor that takes place in an online environment. This chapter provided a succinct version of the information required to proceed ahead with the study including research questions, starting background research, and the theories utilized to comprehend the dynamics.

The following chapter focuses on a review of literature pertaining to the research questions. It also concisely addresses the themes and variables included in the selected studies.

## Chapter II: Literature Review

### Introduction

This secondary research aims to explore how social media can be utilized to engage asynchronous online learners and foster their sense of belonging. In the context of online education, earlier research is focused on facilitating learning and improving the efficacy of the learning outcomes, a sense of isolation among students results in an increased attrition rate in online courses (Iqbal et al., 2010). Social media can play a vital role in improving student's social engagement and foster a sense of belonging in them; Iqbal and colleagues (2010) suggested that if social networking sites are used for academic purposes, the students' performance and learning can be enhanced and improved. There are a multitude of benefits when it comes to social media that can be harnessed for improving students' interest, progress, and learning.

### Methodology

The research studies analyzed in this chapter were searched, collected, and referenced using St. Cloud State University library resources, Google Scholar, EBSCO host database, and SCSU interlibrary loan service. The keywords used while searching include *social media*, *foster*, *sense of belonging*, and *online education*. The literature was chosen from peer-reviewed journals and primary research studies.

Following is the literature matrix for this study which has been recorded in tabular form. Table 2.1 includes the information regarding the research articles selected for the purpose of this literature review which include: the author(s), year of publication, and the variables under inspection in each article.

**Table 2.1***Literature Matrix*

Author	Year	Variables Considered in the Study			
		Online Education	Sense of Belonging	Social Media	Survey
Keegan	1986	x		x	
Beldarrain	2006	x	x	x	
De Freitas	2008	x	x		x
Iqbal, Kankaanranta & Neittmaanmaki	2010	x	x		
Yan Yu, Tian, Vogel & Kwok	2010	x	x	x	
Dabbagh & Kitsantas	2012	x	x	x	
Selwyn	2012	x	x	x	
Joosten	2012	x			x
Haiguang, Chenzu, Pan & Cong	2012	x		x	
Thomas Herbert & Teras	2014	x	x	x	
Rasiah	2016	x	x	x	
Dahlstrom, Brooks & Bichsel	2014	x	x	x	
McAvinia	2015	x	x	x	



**Table 2.1 (continued)**

Tiba, Condy, Chigona & Tunjera	2015	x	x	x
Kim & Lundberg	2015	x	x	
Miguel, Caballe, Xhafa & Prieto	2015	x	x	x
Yang, Quadir Chen & Miao	2016	x	x	x
McAvinia	2016	x		x
Lau W.F	2017		x	x x
Anumpa Singh	2018		x	
Won, Wolters & Mueller	2018	x	x	
Coronella	2018	x	x	

### Variables and Themes

In this study, the variables and themes pertain to exploring the definitions of students' sense of belonging, the transfer of aspects from traditional to online education, and the utilization of social media to foster a sense of belonging. The institutional environment plays an important role, involving the interaction between the learners and their institution. Social media can be used in the learning process to enhance the interactions between the students and their peers - additionally, social media can be used to engage online learners in course activities. The findings from the review of the literature are described below based on the main topic and themes.

## **Online Education**

Online education, due to its ease of access, provides a wide range of courses in various disciplines, a distinguished characteristic of online asynchronous education is the spatial and temporal separation among the students and instructors (Yang et al., 2016). To meet the requirements of those students who cannot participate in face-to-face courses, online education emerged to help distant learners (Keegan, 1986). To meet the demands for an education which is more cost-effective and to offer it for a broader audience, a growing proportion of higher education is taking place via online platforms (Dabbagh & Kitsantas, 2012). Online education programs facilitate the learners and instructors who are physically apart, yet maintain interactions in several ways; the delivery mechanism may include computer-assisted and web-based instructions such as video conferencing and/or video-based courses – technology has progressed rapidly and played a pivotal role in the establishment of internet-based synchronous and asynchronous online learning networks which have enabled online learners to access education from any place at any time; the revolution in technology has resulted in improved communication and collaboration between the institution and online students (Beldarrain, 2006).

### ***Emerging Technologies in Online Education***

Asynchronous courses are primarily delivered through the Learning Management System (LMS), it enables the students to access the course materials and assignments irrespective of the time, and place through devices such as desktop computers and mobile phones (Conde et al., 2014).

More sophisticated technologies have been emerging in e-learning such as Virtual Reality (VR) and Augmented Reality (AR). Such immersive technologies have the potential to evolve teaching and learning. The incorporation of such technologies can make the

learning experience more eventful for learners. According to Becker et al. (2018), educational institutions that have adopted virtual reality (VR) and augmented reality (AR) have the potential to revamp the educational ecosystem and redefine the instructional design principles. Digital storytelling (DST) is another tool that can be used by instructors and has been found beneficial for promoting collaborative learning, motivating, and engaging learners (Tiba et al., 2015). Among all these learning modalities an e-book is one of the pillars of the mobile learning platform as it makes learning effective (Haiguang et al., 2012). It is smaller in size, lighter in weight, easier to handle, and cheaper as compared to a mini laptop or netbook, for example, the Amazon Kindle and Sony Pocket (Nie et al., 2011). Other technological tools that have enabled collaboration in online learning include Social Media. They allow learners to instantly connect in groups or share concepts by sending instant messages and tweets.

### **Sense of Belonging**

A sense of belonging is a sociological construct for cohesion and is the extent to which students feel that they belong to the institutional community (Kim & Lundberg, 2015). It is an important psycho-sociological need for the betterment of students (Singh, 2018). Sense of belonging has emerged as a critical factor that has made significant contributions towards students' academic success (Won et al., 2018). It also improves their ability to adjust to the institution's environment; moreover, it leads to positive behavior and response to learning (Vacarro et al., 2015). Recent research has concluded that several factors influence the students' perceived sense of belonging which includes the interactions with the peers, faculty, and the cultural diversity of the learners (Vacarro et al., 2015).

The sense of belonging is considered a necessary ingredient for successful online learning; retention rates in online education are closely bound with a sense of belonging

(O’Keeffe, 2013). The researchers are most concerned with the level of interactivity the online course/s can provide for the learners, which also impacts belonging – A lack of sense of belonging in the online education adversely impacts the retention rates of students in online courses (Thomas et al., 2014).

To provide online learners with a sense of belonging similar to that of on-campus education, the students must socially engage with peers (Yang et al., 2016). Emerging technologies can provide ample opportunities for educators to develop/improve interaction and collaboration among the learners, which can help create true learning communities in asynchronous courses (Beldarrain, 2006).

### ***Achievement Goal Theory***

Achievement goal theory (goal orientation theory) emerged as a critical perspective on the ability of students to adjust to the institution and be involved in the learning activities; this theory explains the factors which influence the motivation of students to achieve their objectives hence it is one of the significant frameworks in understanding the motivations of students (Kaplan & Maehr, 2006). By understanding the student achievement goals, the educators can understand the psychological process through which achievement behavior is created and hence they can provide advanced learning facilities to students (Lau & Lee, 2008). The motivation results in several positive outcomes in education such as students’ increased interest in the course studies, conceptual learning, and desire to perform well on quizzes (Baeten et al., 2013).

### ***Validation Theory***

The theory of validation was proposed by Rendon in 1994. It describes how the involvement of students plays a role in their academic success and social behavior. In terms

of education, involvement is considered as the effort, energy, and time a student puts forward in the learning process (Coronella, 2018).

A research conducted by Linares and Muñoz (2011) focused on the development of validation theory; the ways in which it has been utilized in examining students' success and development; and further recommendations that could be used in the betterment of the theory. They stated that validation is a supportive process that fosters academic progress and self-efficacy. The level of validation or reassurance students receive from the institution assists in acquiring self-confidence and motivation for learning. The validation experiences can include instructors referring to students by names or provide them opportunities to be successful learners by interacting during the learning activities, which develops a sense of belonging among the learners.

### ***Sense of Belonging Translation to Online Courses***

A wide range of Information and Communication Technology (ICT) has been used to develop different learning methodologies by educational institutes, over the past decades, computer-supported collaborative learning (CSCL) is considered the most influential e-learning ecosystem; moreover, to support CSCL different Learning Management Systems (LMS) have been used by instructional designers and instructors (Miguel et al., 2015). For instance, Blackboard, Canvas, and D2L- Brightspace are considered as some of the few most impactful cloud-based LMS that provide detailed course material and effective delivery; these systems also provide tracking of the students' progress in the course, which enables them to stay connected with the faculty as well as classmates for a healthy competition (Dahlstrom et al., 2014). Effective use of such systems can assist in generating a sense of belonging in online courses.

## **Social Media**

Social media is a term that can describe any number of technological systems related to community and collaborations, including social networking sites (Joosten, 2012). It has been integrated into the personal lives of millions of people worldwide. Almost everyone is aware of the notion of social networking sites, blogs, and applications such as Twitter, Facebook, Youtube, and LinkedIn. Social media applications allow users to interact and converse with each other, which results in creating, editing and sharing new forms of textual, audio, and visual content (Selwyn, 2012).

Social Media can be another tool for translating a sense of belonging to online courses, these social networking sites can be used by educational institutions, through which online students can interact with faculty and peers (Yu et al., 2010). In higher education, various social media tools such as Twitter and Facebook have been increasingly used by faculty and students to promote teaching and learning respectively (Lau, 2017).

The utilization of social media tools can add a new dimension to online education, it can be used to foster a sense of belonging in online learners without compromising the quality of online education; different research studies have assessed the effectiveness of social media to enhance learning in online classes (Larreamendy-Joerns & Leinhardt, 2006). For instance, Friesen & Lowe (2012) posited findings in their study that adapted to social networking services instead of television in terms of being a cultural form and its efficacy in education – social media can be used to collect information while conducting research and collaboration among students; it helps students to engage and discuss course content, for collaborative purposes, social media allows students to form study groups; it also allows students to rapidly collaborate through their mobile devices.

In the early days of educational technology, educational communities were reluctant to use social media in teaching and learning. However, amidst technological developments, higher education institutions and faculty have realized that online learners are avid social networkers. Therefore, higher education instructors must approach and utilize social media tools constructively and objectively to meet the needs of students' digital behavior (Rasiah, 2016). Many students find online learning more conducive to building a community since they can connect through social networking and develop a sense of belonging (Thomas et al., 2014). For instance, students who used Twitter for class discussions showed better academic grades because of extended interactions between the teacher and students via the social media platform that went beyond regular online LMS interactions (Lau, 2017).

### **Gaps in the Research**

The researchers tend to focus more on the increasing trends of online education and factors influencing a sense of belonging but lack the research survey based on student groups. The research articles lack a comparison of the sense of belonging among online and on-campus students – thus, limiting the discussion on various fronts especially in ways of fostering it in different student groups. Furthermore, there is a dearth of research that describes the impact of developing a sense of belonging to gain better academic results in online courses. Moreover, most of the data collected in previous literature has failed to focus on the imperative role of social media as a tool to enhance students' sense of belonging in non-traditional, online courses.

In this secondary research study, the research questions will examine the significance of social media in the context of online education, by critically analyzing the published research studies. This will add data to the existing body of knowledge pertaining to online education. There are research studies that focus on social media, online education, or both

together. However, only a few articles focus on other factors like belonging, social media, and online education.

### **Summary**

Review of research articles was carried out to ascertain information on the concerned variables in this secondary study; the relationships between them and recurring themes were examined to obtain relevant information regarding research questions. The findings show that a strong sense of belonging results in higher learning gains and retention rates in online education. The empirical studies suggest that the use of social media in education can be beneficial to foster a sense of belonging in online students. It can be used to enhance communications between the instructors and students and to promote collaboration among the learners, due to which they do not feel isolated. However, despite the abundance of research data regarding social media and online education, there is an inadequate number of articles that discuss the element of social media, along with the sense of belonging in online education.

The following chapter will explain the methodology for selecting and organizing research data to address the research questions.



## **Chapter III: Methodology**

### **Introduction**

The purpose of this research is to explore strategies in the existing literature that foster a sense of belonging in students enrolled in online courses through the use of social media. The results of this study are expected to be used for enhancing online classroom efficacy and developing approaches to better suit the classroom environment in distant learning. They would also be beneficial in devising unique and more effective ways of using social media as a tool to bridge the communication gap between an instructor and their students in online courses. The primary research question in this study focuses on how the assistance of social media can engage and develop a sense of belonging amongst students in online asynchronous courses.

This chapter will provide an outline of the methodology used for this study; this includes the selection of articles for the current research, the organization of the data that was collected, and eventually the utilization of the gathered data to draw connections and conclusions based on research questions.

### **Institutional Review Board Exemption**

This research study did not require approval from the Institutional Review Board as the data was not collected directly from human subjects. This is a secondary research study and thus to gather the data required for it already existing research articles were consulted, where identifying information regarding individuals had already been removed. It was not required to request permission from the institutional review board (IRB) to commence with the study as the IRB is only responsible for overseeing researches that pertain to establishing direct contact with human participants.

## **Methodology**

The research articles chosen for the present secondary research were found using the keywords “social media”, “sense of belonging”, “online education”, “asynchronous classrooms”, “distance learning”, “teaching”, “students”, “retention”, and “development of strategies.” The studies for review were found using both Google Scholar and EBSCO host; perusing abstracts was utilized as a way to determine the relevance. If found to be useful, the research articles were then further searched for pertinent information. The short-listed studies were also used for finding more research articles through the given references in them. Twelve studies with the most appropriate and relevant data regarding the variables were included in addition to those studies which pertained to the relationships inquired by the research questions were selected for review. This was an appropriate number since it became easier to revise and go through the material rigorously whilst keeping the process manageable.

With the exception of one research article, all other studies chosen were from the last fifteen years, making them range from 2006-2017 – this time range was sufficiently owing to the relevancy of the studies conducted during this period. Additionally, all of these studies were selected because they pertained to the variables under study and gave relevant information regarding one or more of the research questions; as they either directly addressed the factors influencing the sense of belonging in online classrooms, or suggested connections. Most of the articles included in Chapter 2 were retained because they had significant information regarding the use of social media in fostering students’ sense of belonging in asynchronous courses.

The use of different terminologies and research methods involved in the studies made it difficult to create direct parallels hence the qualitative interpretation of the data was

preferred over the quantitative results provided; the qualitative information provided a more comprehensive and thorough account of how all the concerned variables of social media would best be utilized in devising strategies for fostering a sense of belonging in students in online classrooms.

This study analyzes and develops a detailed and complete interaction between all the variables and explore how the interaction among them would be able to provide answers to the research questions set out for this study. The findings could be used to study the influence of social media in-depth and how it concurrently impacts the sense of belonging, online courses, creation of online communities, and emerging technologies.

Studies were maintained and organized on a computer, and tables were created in Microsoft Word to arrange and classify the main trends identified in them. This proved to be very helpful in recognizing patterns and eventually understanding the connections between the variables holistically. The information categorized in the tables included the author of the study, year of publication, notes on significant information in the study, the country where the study was conducted, and the main findings of the study.

### **Timeline**

The timeline of this study was determined after a consultation with the chairperson. The preliminary review of the literature commenced in November 2019. This process assisted in locating gaps in the research and determining the primary research questions. After the preliminary review, Chapter 1: Introduction was completed in December 2019. The primary review of the literature, Chapter 2 was completed and authored by mid-February 2020. By the end of February 2020, the methodology of the study was determined and authored in Chapter 3. It was initially planned to hold a preliminary culminating project meeting in June 2020. The last two chapters; Findings and Conclusion, were completed between June & July 2020.

Lastly, the final meeting and submission to the SCSU repository were completed in August 2020.

### **Summary**

Studies used in this secondary research were found using specific keywords entered in search engines such as Google Scholar. Some of the terminologies were used as keywords to make the process of research and recording easier whilst also making it more manageable. About 90% of the articles were recent and thus were able to provide pertinent, up-to-date information on the use of social media in online classrooms. The chapter also included a timeline that this study followed through its course. The following chapter will contain information regarding the findings of the secondary research study.

## **Chapter IV: Findings**

### **Introduction**

Sense of belonging and its development is a significant factor in achieving results that encompass academic success and student motivation in online education. There is sufficient data that suggests that sense of belonging is significantly correlated with student success and higher efficacy of learning in asynchronous classrooms. This secondary research study examines how social media can assist in creating and nurturing a sense of belonging in students that are enrolled in online courses.

This chapter constitutes the findings of this secondary research study. The content of the findings is elaborated to focus on the key areas pertaining to the research questions of this study – the relationship between sense of belonging and online courses, the importance of the sense of belonging in this regard, the use of social media to foster a sense of belonging in students in online education, and the impact of social media on the academic retention and completion aspect of students in online classes.

### **Findings**

The findings of this secondary research study are organized in the table below. Table 4.1 shows the summary of the analyses conducted on the selected research studies. It includes the author(s) name, the year the study was published in, the title that the study was published under, the summary of the main findings of each study, and a record of the presence of other factors/mediators that might have influenced results. This made it easier to keep a record of trends found in all the selected studies and for the data to be organized in an orderly manner for examination. In addition, findings will be discussed in a descriptive manner as it is the most significant part of this paper.

**Table 4.1**

*Summary of the Analysis of the Related Research Studies Findings*

Author	Year	Title	Summary of Research	Other Factors/Mediators
Young & Bruce	2011	Classroom community and student engagement in online classes	Significant differences were found in students' sense of community in relation to their instructors across varying disciplines	Students in arts and sciences reported weaker engagement compared to students enrolled in health and education science courses.
LeNoue, Hall & Eighmy	2011	Adult education and the social media revolution	Social media allows academics to design curriculum more efficiently than was thought to be previously possible in online education. Furthermore, the learning environment created online through the use of social software tends to be open-ended and allows for innovation, creativity, and greater adaptability through individualized preferences.	Success for the use of social media in online education requires that courses be designed correctly to serve this purpose whilst also engaging learners to actively participate rather than passively consume.
Moran, Seaman & Tinti-Kane	2011	Teaching, learning, and sharing: how today's higher education faculty use social media	More than 75% of all instructors use social media during a class. Around 30% require students to go through content posted on social media after class while 40% make content given on social media part of assignments.	Instructors cited the privacy and integrity of their students' work as one of the main concerns regarding the use of social media.

**Table 4.1 (continued)**

Johnson	2012	Campus racial climate perceptions and overall sense of belonging among racially diverse women in STEM majors.	Self-concept which is directly related to better academic performance was found to be significantly associated with sense of belonging. However, being a woman of color negatively affected participants' sense of belonging throughout.	Supportive environment of residence halls was the most potent contributor to a stronger sense of belonging.
Crampton, Ragusa & Cavanagh	2012	Cross-discipline investigation of the relationship between academic performance and online resource access by distance education students	In both groups of microbiology and sociology distance learning students, there was found to be a positive, significant correlation between students accessing and downloading resources made available to them on social software technology and their academic results. Learning outcomes were positively influenced by the availability of online resources for students.	Students' approach to learning and towards reaching academic goals could affect their final grades.
Mueller, Won & Wolters	2018	Sense of belonging and self-motivated learning: Testing achievement goals as mediators	The results showed that sense of belonging in students with relation to school was associated with mastery goals. Their sense of belonging to their peers however was found to be related to their performance goals.	The relationship between time management with regard to academics and sense of belonging in students was mediated by mastery of goals

**Table 4.1 (continued)**

Friedman W & Friedman H	2013	Using social media technologies to enhance online learning	Communication, collaboration, community, and creativity are the defining factors that are shaping the world of online learning. The internet, in particular social media, is the precipice of combining all these facets to provide the best possible outcomes in regards to online education.	Student motivation or lack thereof plays a greater role in their academic performance in traditional face-to-face courses when compared with online courses.
Curtin, Stewart & Ostrove	2013	Fostering academic self-concept: Advisor support and sense of belonging among international and domestic graduate students.	It was found that advisor support was strongly associated with not only students' sense of belonging but also their self-concept. International students also had a greater sense of belonging than domestic students.	There was a relationship between academic self-concept and sense of belonging in domestic students whilst no such relation existed for international students.
Thomas, Herbert & Teras	2014	A sense of belonging to enhance participation, success and retention in online programs	Sense of belonging was determined to be the most significant and valued feature of an online classroom. Ice-breakers, student-to-student collaborations, and real-time interactions were found to be most effective.	Teaching practices of academics can greatly affect the development of sense of belonging in students enrolled in online courses.



**Table 4.1 (continued)**

Glass, Kociolek, Wongtrirat, Lynch & Cong	2015	Uneven experiences: The impact of student-faculty interactions on international students' sense of belonging	Participation, inclusion, and personal ways of knowing were identified by students as having a significant educational impact on their sense of belonging.	Sub-groups relating to financial stability and academic preparedness had differences among them when it came to positive student-faculty relationships.
Kaplan & Haenlein	2016	Higher education and the digital revolution: About MOOCs, SPOCs, social media, and the Cookie Monster	The best outcomes in online education can be achieved by the instructors through several 10-12-minute video films designed to teach. Furthermore, scalability and choosing a platform with the least amount of distractions for students can also yield better results.	Supplementing online education through social media might possibly lead to the creation of problems mainly regarding the privacy of data including but limited to illegal download of information.
Vincent	2016	Social media as an avenue to achieving sense of belonging among college students	Social media has been found to have a significant role in developing students' sense of belonging. Developing and maintaining an online presence; initiating individual conversations; and engaging with online groups are the main factors contributing to a stronger sense of belonging in students.	Social media is discussed under the general category of technology; there are no specifics as to the kind of social media that may be helpful.

Social media can play an important role in facilitating online education. The use of technologies related to the utilization of digital social platforms has been found to be efficient and progressive in garnering better results in online education. In this chapter, findings will suggest that leveraging social media in online courses can assist in fostering students' sense of belonging.

### **Relationship between Sense of Belonging and Online Education**

Previous chapters give a detailed account of the presence of a significant relationship between sense of belonging and online education. Inculcating a strong sense of belonging in students who are part of the online education system can lead to more effective results and enhanced academic retention and completion. Students can learn to cultivate their motivation and aspire towards greater results in online courses directly as a result of the development of their sense of belonging. Online education thus requires facilitation in fostering that sense of belonging so that it can produce optimal and quality results.

Online education is one of the more important aspects of providing cost-effective education and its exponential growth in recent years is evidence of this development (Dabbagh & Kitsantas, 2012). Sense of belonging has been found to be of great significance in academic settings, including asynchronous classrooms, and its growth has been observed to directly influence students' success (Won et al., 2018).

According to Yang et al. (2016), sense of belonging is an imperative part of asynchronous distance learning through online means, one that requires active social engagement with peers to strongly develop. Online courses often lack the interactive characteristics that are most commonly found in face-to-face learning; this decreased interactivity in an online course can adversely affect students' sense of belonging which in

turn has been found to be closely associated with students' retention (O'Keeffe, 2013; Thomas et al., 2014).

Peruse of different researches mentioned above points to the existence of a strong and proactive relationship that has been established between sense of belonging and online education. To understand the dynamics of this relationship, the importance of sense of belonging must be fully comprehended so that nuanced aspects of this relationship can be examined.

### ***Importance of Sense of Belonging***

**Sense of Belonging and its Effects.** Glass et al. (2015) conducted in-depth interviews with 40 participants to determine the 'motivational dynamics of student-faculty interaction' (p.356). After analyzing and coding the data they found that students' sense of belonging was one of the most significant aspects of their relationship dynamics with their professors; participants' development of a stronger sense of belonging was strongly associated with their perception of positive interactions with faculty. Participants cited inclusion, participation, and possible ways of knowing as factors that greatly affected their sense of belonging. These factors were further determined as being curative in boosting or diminishing student motivation.

**Student Motivation.** Sense of belonging and its importance in academic settings was reinforced by Thomas et al. (2014) wherein it was found that fostering sense of belonging is an incredibly effective way of improving the learning experiences of students and increasing their retention abilities. Its significance in online education was even more highly regarded as students experiencing isolation and lack of interaction in asynchronous classrooms reported lower motivation and weaker academic performances. The most important ways to create a stronger sense of belonging that could cater to a community of diverse individuals online

were also prescribed; ice-breakers, real-time interactions, and face-to-face student collaborations were listed as the most effective methods to nurture a greater sense of belonging in students.

**Sense of Belonging and Academic Self-concept.** Sense of belonging comprises of classroom community and student engagement; both facets were examined by Young and Bruce (2011) as they collected data from 1410 students enrolled in varying online courses across five colleges. They found significant differences across disciplines in feelings of community as a result of their survey. Students enrolled in courses relating to health education reported a stronger sense of community and engagement as compared to students who were studying business and arts courses. Similarly, Curtin et al. (2013) examined both sense of belonging and self-concept in international and domestic students. Advisor support was determined as a key aspect in developing not only students' sense of belonging but also their self-concept. However, for international students, their sense of belonging was not associated with self-concept; the opposite was true of domestic students whose sense of belonging was strongly related to their academic self-concept.

The aspects which elaborate on the importance of sense of belonging have been discussed above through evidence-based on previous research. It is significant that the role of social media be determined in the relationship between online education and sense of belonging and the ways in which it influences progress and strength between the variables.

### ***Social Media***

Students' sense of belonging can be developed through various means; however, with the expansion of the internet and greater online presence, social media has become a tool that can be instrumental in fostering a sense of belonging in students. Vincent (2016) found that social media has a very significant role in helping students develop a stronger sense of

belonging and that different aspects could be strengthened to foster it further. Having and maintaining a constant online presence; encouraging students not only to partake in but also to initiate individual conversations; and creating an online community through engagement in various groups are just some ways of how social media can assist students in creating a greater sense of belonging.

In a similar stead, Iqbal et al. (2010) stated that social networking sites can be utilized to improve the learning outcomes of students; social media's use for academic purposes can serve a variety of different benefits ranging from enhanced learning to closely monitored student progress and motivation. Won et al. (2018) examined the responses of 385 college students in the United States, and they found that a sense of belonging to an institution for the students served as a significant predictor of effective academic time management strategies, whilst sense of belonging to their social group in college was a predictor of peer learning strategies. Their sense of belonging to their peer groups, with whom their means of communication was via social media platforms, was strongly associated with their performance goals as students.

### ***Academic Retention and Graduation***

It has been determined that self-concept is directly associated with the academic performance of students, it is a positive predictor for effective academic learning (Ghazvini, 2011). In a college environment, self-concept has also been found to be significantly related to students' sense of belonging (Inzlicht et al., 2006). In a study conducted by Johnson (2012), a sample of 1722 women from STEM majors, was selected to examine the factors that affected their sense of belonging and in turn their academic performance. Intrapersonal processes were stated to be the most significant aspect of an overall stronger sense of

belonging; additionally, it was also suggested that academic abilities and performance were highly regarded facets in participants' sense of belonging.

A study by Crampton et al. (2012) included 109 sociology majors and 181 microbiology majors all of whom were enrolled in distance learning courses. A significantly positive correlation was found between the final grades of microbiology students and the rate of access to the online resources provided to them; this positive correlation between the two variables was also found in sociology students. The resources available online provided students with a means to interact with subject curriculum and content in their own individual way thus making them active learners instead of passive listeners.

The relationship between sense of belonging and academic retention and completion is well-established. It is examined with well-founded evidence and sense of belonging has been found to strongly impact students' academic results and their motivation to improve their academic graduation. A stronger sense of belonging helps in creating a more positive self-concept thus encouraging students to achieve better results and contributing to them being more driven and motivated in academic settings.

### **Online Education and Social Media**

The importance of social media and its role in facilitating online education is of great significance. The use of technologies related to the utilization of digital social platforms has been found to be efficient and progressive in garnering better results in online education.

LeNoue et al. (2011) examined the role of social media in online education and stated that social media facilitates accessibility for both learners and instructors that allows for a smoother transaction of knowledge which supports greater interactivity by minimizing the adverse effects of having physical barriers. It allows instructors to design courses that benefit individuals in ways that had not been possible in online education before. Furthermore, social

media provides flexibility that often translates to adaptability and the presence of an abundance of resources that make the online environment in asynchronous classrooms organized and efficient.

According to Friedman and Friedman (2013), social media comprises of a range of varying technologies related to the web such as blogs, wikis, and online networking etcetera. Additionally, they outlined communication, collaboration, community, creativity, and convergence as the defining characteristics of social media technology that can help supplement growth and divergence of online education. Moran et al. (2011) looked at the use of social media among faculty members to assist them in teaching. They collected data using surveys from 942,677 teaching faculty. It was found that almost 30% of the instructors required students to use social media to view content outside class; around 40% of the faculty instructed students to complete tasks on social media as part of course assignments; a staggering 80% utilized online streaming services to assist in video play during class. Therefore, their findings suggested that social media with video playback capabilities added more benefits in online courses.

Kaplan and Haenlein (2016) examined the effects of the “digital revolution” on higher education which encompasses the dynamics created between social media, learning, and online education. The increased use of digital spaces and their exponential growth over time has made it essential to adapt effectively to these evolving methods of teaching and learning. The use of social media has allowed the online education system to develop innovations aimed at pedagogical growth. It gives room to instructors and students alike to create and maintain a sense of community in their online presence. It is further emphasized that outstanding learning results can be achieved using video films of 10-12 minutes by the online instructors. Therefore, it is imperative that online teaching staff learns to scale their activities

in distance learning and adopts the most effective ways to avoid distractions for the students enrolled in their classes.

Further practical strategies to leverage social media in online education can be found in Appendix A.

### **Summary**

This chapter discussed the findings of the current research study in light of the research questions that were posed. The use of social media was determined to be a significant factor in fostering a sense of belonging in students enrolled in online courses. Sense of belonging had an established significance in positively influencing academic performances in online education. Stronger sense of belonging was created through the use of varying social media technologies that provided active interaction and better interpersonal communication for the learners. Students that utilized social software in distance learning were able to achieve better results academically. Social media could be cited as an imperative tool that can be used to develop a sense of belonging in asynchronous classrooms, it is the link that can translate sense of belonging from face-to-face classrooms to online courses. The next chapter will provide a summary of the secondary research and offer possible implications for further research.



## **Chapter V: Conclusion**

### **Introduction**

This secondary research discussed and examined ways to foster a sense of belonging in students enrolled in online classrooms using social media including other factors that could affect this development. The research questions focused on utilizing social media to create a stronger sense of belonging in asynchronous classrooms; the importance of sense of belonging in the context of online learning; and the effects of sense of belonging on students' academic retention and graduation. This chapter caps the present study with a conclusion, which includes a discussion of the findings of the review of literature, implications of the study, limitations of the study, and suggestions for further research.

### **Discussion of the Findings**

The findings of this secondary research were found to be consistent with the analysis of the literature that was conducted. Social media was found to have a significant impact on the development of sense of belonging in online education. Sense of belonging is an important factor concerning academic settings and yielding effective results. Various studies have examined the role of sense of belonging in online courses and have found it to be significant in nurturing student motivation and achieving better academic results. Creating a better sense of belonging in students counters the lack of active interaction in asynchronous classrooms and helps in improving retention and overall results.

Sense of belonging has also been posited as one of the most important aspects in the relationship between faculty and students with a stronger sense of belonging leading to positive perceptions of interaction between professors and their classes. It has also been deemed as a significant factor for improving retention in students and creating an

environment that better facilitates the learning experiences of students enrolled in online courses.

Several methods have been examined and found to have had a significant impact on developing students' sense of belonging - particularly the use of online services and social media. Maintaining a constant online presence and taking an active part in online engagement within community and groups nurtures a greater sense of belonging in students. Encouraging social media as a means of communication in online education and making use of social networking sites has demonstrated to have led to better academic retention, completion, and student motivation.

Furthermore, social media provides accessibility and allows instructors to communicate effectively with students enrolled in online courses. It helps in minimizing the effects of physical barriers pronounced through the system of online education. It utilizes varying degrees of technology to improve the active learner-teacher experience and greatly improves the interactions between students and faculty. Innovation through social networking in asynchronous classrooms continues to develop exponentially yielding better results and promoting more effective academic performances by fostering a stronger sense of belonging in students.

### **Limitations of the Study**

There were a very limited number of research articles that focused directly on the variables under consideration in the research questions posed for this secondary research; sense of belonging, online education, and social media were very rarely studied together as the main focus of many research articles. The rapid growth of the digital world implies that newer technologies are being studied increasingly but the research is not made readily

available for other scholars. There might have been newer, better research already conducted but not available online for use and thus could not be included in the analysis of the literature.

There were also a lot of research studies available in other languages pertaining to the research questions of this study but could not be utilized because of the language barrier and lack of understanding. Moreover, teaching systems vary throughout the world and instructors use a number of different methods depending on the region in which education is being provided leading to false generalizations.

Variables such as sense of belonging and academic performance are very prone to being subjectively defined and are more likely to have varying operational definitions; thus, it is challenging to hold them to a constant means of measurement. Their definitions and the criteria which researchers utilize to measure them vary so frequently that it is difficult to use a standard definition that falls in line completely with the research questions set out for this study.

### **Implications**

- Fostering sense of belonging has wider connotations for the education system as a whole regardless of distance learning. Finding effective methods to boost and maintain a sense of belonging in students can help in improving not only academic results but also retention, completion, and overall student satisfaction and motivation.
- The use of social media and related social networking sites can open avenues for students who face not only physical barriers posed by online education but also the cultural barriers. The use of digital platforms encourages communication and active interaction between students and faculty as a learning community not only as individuals.

- The wide and far-reaching accessibility of social media can help overcome issues of regional availability in asynchronous classrooms. Internet websites that provide platforms for social media exchange are more or less quite easily accessible everywhere around the world, relying on such means would mean that students will not have to be concerned about the availability of certain materials that could give their peers any academic advantage over them owing to the availability or lack thereof of learning sources.
- The use of social media and the development of a sense of belonging in students in distance learning leading to better academic results make a certain case for increasing the number and variety of online courses offered. The idea that more institutions and well-reputed educational centers around the world offering their most sought-after programs to a larger number of students is becoming progressively pragmatic and richly inclusive.
- Online education is a rapidly expanding field that has experienced exponential growth in recent years. Its development points towards its efficacy and increasingly adaptive real-world applications. It has been cited by a substantial amount of researchers as the future of education; thus, it is imperative that creating a stronger sense of belonging and incorporating the use of social media would be likely to yield positive results and therefore should be utilized to its full extent.

### **Suggestions for Further Research**

This secondary research study focused on utilizing social media to develop a stronger sense of belonging in students enrolled in online courses, it would be beneficial for any further studies to gather primary data from instructors who have been leveraging social media

to make their classes more interactive and effective. It would provide first-hand findings that could better examine the efficacy of such methods for the future of online education.

There could also be a meta-analysis between different social media platforms and the components of sense of belonging which different platforms impact. This could provide an in-depth analysis of the variables involved and the underlying dynamics that mediate the relationship. It could help provide very specific data that could be utilized in a particular situation where only certain facets of sense of belonging would need to be addressed.

In addition, it would be interesting for further studies to examine the use of virtual reality in bolstering students' sense of belonging in online education. It could be the most effective way of overcoming the interactive problems associated with physical barriers presented by the asynchronous classrooms.

Lastly, social media usage in online education has highlighted some concerns in recent times. These concerns revolve around data privacy, formal and informal communication with instructors and peers, students' personal information, and instructor preparedness to use social media for educational purposes. Exploring how to address these concerns and implementing best practices, can contribute significantly to future research.

## **Summary**

This chapter focused on integrating all the information and findings presented in this secondary research study. Social media can be effectively used to foster students' sense of belonging in online education. Sense of belonging is a significant aspect of asynchronous classrooms and is extremely impactful in positively influencing academic results focusing on retention and completion. Online education has often been cited as the education system of the future and its efficacy can strongly affect the accessibility of such programs to the wider population. The current use of social media and continuous advancements in technologies

such as virtual reality can be imperative in determining the reach and effective real-world application of online education in times ahead.

## References

- Ali, R., & Leeds, E.M. (2009). The impact of face-to-face orientation on student retention: A pilot study. *Online Journal of Distance Administration*, 12(4).  
<http://www.westga.edu/~distance/ojdla/winter124/ali124.html>
- Anderman, E.M., & Patrick, H. (2012). Achievement goal theory, conceptualization of ability/intelligence, and classroom climate. In *Handbook of research on student engagement* (pp. 173-191). Springer, Boston, MA. [https://doi.org/10.1007/978-1-4614-2018-7\\_8](https://doi.org/10.1007/978-1-4614-2018-7_8)
- Arasaratnm-Smith, L.A., & Northcote, M. (2017). Community in online higher education: Challenges and opportunities. *Electronic Journal of e-Learning*, 15(2), 188-198.  
<https://eric.ed.gov/?id=EJ1141773>
- Bawa, P.(2016). Retention in online courses: Exploring issues and solutions- A literature review. *Sage Open*, 6(1). <https://doi.org/10.1177%2F2158244015621777>
- Baeten, M., Dochy, F., & Struyven, K. (2013). The effects of different learning environments on students' motivation for learning and their achievement. *British Journal of Educational Psychology*, 83(3), 484-501. DOI: <https://doi.org/10.1111/j.2044-8279.2012.02076.x>
- Becker, S. A., Brown, M., Dahlstrom, E., Davis, A., DePaul, K., Diaz, V., & Pomerantz, J. (2018). NMC horizon report: 2018 higher education edition. *Louisville, CO: Educause*.

- Beldarrain, Y. (2006). Distance education trends: Integrating new technologies to foster student interaction and collaboration. *Distance Education*, 27(2), 139-153.  
<https://doi.org/10.1080/01587910600789498>
- Conde, M. Á., García-Peñalvo, F. J., Rodríguez-Conde, M. J., Alier, M., Casany, M. J., & Piguillem, J. (2014). An evolving Learning Management System for new educational environments using 2.0 tools. *Interactive learning environments*, 22(2), 188-204.
- Coronella, T. (2018). *Validation Theory Into Practice: Asset-based Academic Advising with First-generation Latina Engineering College Students*. Arizona State University.  
[https://repository.asu.edu/attachments/201344/content/Coronella\\_asu\\_0010E\\_17799](https://repository.asu.edu/attachments/201344/content/Coronella_asu_0010E_17799)
- Crampton, A., Ragusa, A. T., & Cavanagh, H. (2012). Cross-discipline investigation of the relationship between academic performance and online resource access by distance education students. *Research in Learning Technology*, 20(1), n1.
- Curtin, N., Stewart, A. J., & Ostrove, J. M. (2013). Fostering academic self-concept: Advisor support and sense of belonging among international and domestic graduate students. *American educational research journal*, 50(1), 108-137.
- Dabbagh, N., & Kitsantas, A. (2012). Personal learning environments, social media, and self-regulated learning: A natural formula for connecting formal and informal learning. *The Internet and Higher Education*, 15(1), 3-8
- Dahlstrom, E., Brooks, D.C., & Bichsel, J. (2014). The current ecosystem of learning management systems in higher education: Student, faculty and IT perspectives.  
<https://doi.org/10.13140/RG.2.1.3751.6005>



- De Frietas, S. (2008). *Serious virtual worlds: A scoping study* (Doctoral dissertation).  
<https://researchrepository.murdoch.edu.au>
- Delahunty, J., Verenikina, I., & Jones, P. (2014). Socio-emotional connections: Identity, belonging and learning in online interactions. A literature review. *Technology, Pedagogy and Education*, 23(2), 243-265.  
<http://dx.doi.org/10.1080/1475939X.2013.813405>
- Finkelstein, J. (2006). *Learning in real time: Synchronous teaching and learning online*.  
Jossey-Bass.
- Friedman, L. W., & Friedman, H. (2013). Using social media technologies to enhance online learning. *Journal of Educators Online*, 10(1), 1-22.
- Friesen, N., & Lowe, S. (2012). The questionable promise of social media for education: Connective learning and the commercial imperative. *Journal of Computer Assisted Learning*, 28(3), 183-194.
- Ghazvini, S. D. (2011). Relationships between academic self-concept and academic performance in high school students. *Procedia-Social and Behavioral Sciences*, 15, 1034-1039.
- Glass, C. R., Kociolek, E., Wongtrirat, R., Lynch, R. J., & Cong, S. (2015). Uneven experiences: The impact of student-faculty interactions on international students' sense of belonging. *Journal of International Students*, 5(4), 353-367.
- Hagerty, B. M., Williams, R. A., Coyne, J. C., & Early, M. R. (1996). Sense of belonging and indicators of social and psychological functioning. *Archives of psychiatric nursing*, 10(4), 235-244.

- Haiguang, F., Chenzu, G., Pan, L., & Cong, J.B. (2012, July). The research on e-book-oriented mobile learning system environment application and its tendency. In *2012 7<sup>th</sup> International Conference on Computer Science and Education (ICCSE)* (pp. 1333-1338). IEEE. <https://doi.org/10.1109/ICCSE.2012.6295311>
- Hiltz, S. R., & Turoff, M. (2005). The evolution of online learning and the revolution in higher education. *Communications of the ACM*, 48(10), 59-64.  
<https://doi.org/10.1145/1089107.1089139>
- Hoffman, M., Richmond, J., Morrow, J., & Salmone, K. (2002). Investigating “sense of belonging” in first-year college students. *Journal of College Student Retention: Research, Theory and Practice*, 4(3), 227-256.  
<https://psycnet.apa.org/doi/10.2190/DRYC-CXQ9-JQ8V-HT4V>
- Hrastinski, S. (2008). Asynchronous and Synchronous e-learning. *Educause Quarterly*, 31(4), 51-55. <http://www.irrodl.org/index.php/irrodl/article/view/1339/2317>
- Inzlicht, M., Good, C., Levin, S., & Van Laar, C. (2006). How environments can threaten academic performance, self-knowledge, and sense of belonging. *Stigma and group inequality: Social psychological perspectives*, 129150.
- Iqbal, A., Kankaanranta, M., & Neittaanmanki, P. (2010). Engaging learners through virtual worlds. *Procedia-Social and Behavioral Sciences*, 2(2), 3198-3205.  
<https://sciencedirect.com>
- Jensen, L. J. (2019). . Integrating Social Media into Online Education. *Library Technology Reports*, 55(4), 27.

<https://search.proquest.com/openview/38fc613ff914ca1d2b2278b3a648d97a/1?pq-origsite=gscholar&cbl=37743>

Johnson, D. R. (2012). Campus racial climate perceptions and overall sense of belonging among racially diverse women in STEM majors. *Journal of College Student Development, 53*(2), 336-346.

Joosten, T. (2012). *Social media for educators: Strategies and best practices*. John Wiley & Sons. <https://books.google.com>.

Juvonen, J. (2006). Sense of Belonging, Social Bonds, and School Functioning. In P.A. Alexander & P. H. Winne (Eds.), *Handbook of educational psychology* (pp. 655-674). Lawrence Erlbaum Associates Publishers. <https://psycnet.apa.org/record/2006-07986-028>

Kaplan, A., & Maehr, M.L. (2007). The contributions and prospects of goal orientation theory. *Educational Psychology review, 19*(2), 141-184.  
<https://doi.org/10.1007/s10648-006-9012-5>

Kaplan, A. M., & Haenlein, M. (2016). Higher education and the digital revolution: About MOOCs, SPOCs, social media, and the Cookie Monster. *Business Horizons, 59*(4), 441-450.

Keegan, D. (1986). *Foundation of distance education*. Routledge.  
<https://content.taylorfrancis.com>

Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvester, B.S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. *Buisness Horizons, 54*(3), 241-251. <https://doi.org/10.1016/j.bushor.2011.01.005>

- Kim, E., & Irwin, J.P. (2013). [Review of the book *College Students' Sense of Belonging: A Key to Educational Success for All Students*, by Terrell L. Strayhorn]. *The Review of Higher Education*, 37(1), 119-122. <https://doi.org/10.1353/rhe.2013.0070>
- Kim, Y. K., & Lundberg, C. A. (2015). A structural model of the relationship between student-faculty interaction and cognitive skills development among college students. *Research in Higher Education*, 57(3), 288-309. <https://doi.org/10.1007/s11162-015-9387-6>
- Larreamendy-Joerns, J., & Leinhardt, G. (2006). Going the distance with online education. *Review of educational research*, 76(4), 567-605.
- Lau, K. L., & Lee, J. C. (2008). Validation of a Chinese achievement goal orientation questionnaire. *British Journal of Education Psychology*, 78(2), 331-353. <https://doi.org/10.1111/j.2044-8279.2008.tb00486.x>
- Lau, W.W. (2017). Effects of social media usage and social media multitasking on the academic performance of university students. *Computers In Human Behavior*, 68, 286-291. <https://doi.org/10.1016/j.chb.2016.11.043>
- LeNoue, M., Hall, T., & Eighmy, M. A. (2011). Adult education and the social media revolution. *Adult learning*, 22(2), 4-12.
- Linares, L. I. R., & Muñoz, S. M. (2011). Revisiting validation theory: Theoretical foundations, applications and extentions. *Enrollment Management Journal*, 2(1), 12-33. <https://www.semanticscholar.org>
- Mayadas, A. F., Bourne, J., & Bacsich, P. (2009). Online education today. *Science*, 323(5910), 85-89. <https://files.eric.ed.gov/fulltext/EJ862347.pdf>

- Mehrdad Maehr, M.L., & Zusho, A. (2009). Achievement Goal Theory: The Past, Present and Future. In *Handbook of motivation at school* (pp 91-118). Routledge.  
<https://www.researchgate.net/publication/282860554>
- McAvinia, C. (2016). Lessons for the Future- The VLE and the MOOC. In the Online Learning and its Users. (pp. 207-228). Elsevier B.V. Publishing.  
<https://doi.org/https://doi.org/10.1016/B978-0-08-100626-9.00008-3>
- Miguel, J., Caballe, S., Xhafa, F., & Prieto, L. (2015). A massive data processing approach for effective trustworthiness in online learning groups. *Concurrency and Computation: Practice and Experience*, 27(8), 1988-2003.  
<https://doi.org/10.1002/cpe.3396>
- Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). e-Learning, online learning, and distance learning environments: Are they the same?. *The Internet and Higher Education*, 14(2), 129-135.
- Moran, M., Seaman, J., & Tinti-Kane, H. (2011). Teaching, Learning, and Sharing: How Today's Higher Education Faculty Use Social Media. *Babson Survey Research Group*.
- Morrow, J.A., & Ackermann, M.E. (2012). Intention to persist and retention of first year students: importance of motivation and sense of belonging. *College Student Journal*, 46(3), 483-491.  
<https://www.ingentaconnect.com/content/prin/csj/2012/00000046/00000003/art00003>

- Nazarieh, M. (2015). A brief history of goal orientations theory and its development. *BEST: Journal of Humanities, Art, Medicine and Sciences, 1*, 49-58.  
[https://www.researchgate.net/profile/Mehrdad\\_Nazarieh/publication/290446358](https://www.researchgate.net/profile/Mehrdad_Nazarieh/publication/290446358)
- Nie, M., Armellini, A., Witthaus, G., & Barklamb, K. (2011). How do e-book readers enhance learning opportunities for distance work-based learners?. *Research in Learning Technology, 19*(1), 19-38.  
<https://doi.org/10.1080/09687769.2010.548506>
- O’Keeffe, P. (2013). A sense of belonging: Improving student retention. *College Student Journal, 47*(4), 605-613(9). <https://eric.ed.gov/?id=EJ1029294>
- Rasiah, R.R.V. (2016). Transformative higher education teaching and learning: Using social media in a team-based learning environment. *Procedia-Social and Behavioral Sciences, 123*, 369-379. <https://expert.taylors.edu.my>
- Rumberger, R.W. (2001). Why students drop out of school and what can be done.  
<https://escholarship.org/uc/item/58p2c3wp>
- Seaman, J. E., Allen, I. E., & Seaman, J. (2018). Grade Increase: Tracking Distance Education in the United States. *Babson Survey Research Group*.
- Selwyn, N. (2012). Social media in higher education. *The Europa world of learning, 1*, 1-10.  
<https://pdfs.semanticscholar.org>
- Shackelford, J.L., & Maxwell, M. (2012). Sense of community in graduate online education: Contribution of learner to learner interaction. *The International Review of Research In Open and Distributed Learning, 13*(4), 228-249.  
<https://www.learntechlib.org/p/49318/>

- Singh, A. (2018). Investigating the sense of belonging of international students through a predictive model. *Graduate Thesis and Dissertations*.  
<https://lib.dr.iastate.edu/etd/16467>
- Slaten, C.D., Ferguson, J.K., Allen, K. A., Brodrick, D. V., & Waters, L. (2016). School Belonging: A review of the history, current trends and future directions. *The Educational and Developmental Psychologists*, 33(1), 1-15.  
<https://doi.org/10.1017/edp.2016.6>
- Smith, G. G., Heindel, A.J., & Torres-Ayla, A.T. (2008). E-learning commodity or community: Disciplinary differences between online courses. *The Internet and Higher Education*, 11(3-4), 152-159. <https://doi.org/10.1016/j.iheduc.2008.06.008>
- Sorensen, C., & Donovan, J. (2017). An examination of factors that impact the retention of online students at a for-profit university. *Online Learning*, 21(3), 206-221.  
<https://doi.org/10.24059/olj.v21i3.935>
- Su, B., Bonk, C.J., Magjuka, R.J., Liu, X., & Lee, S.H. (2005). The importance of interaction in web based education: A program-level case study of online MBA course studies. *Journal of Interactive Online Learning*, 4(1), 1-19.  
<http://www.ncolr.org/jiol/issues/pdf/4.1.1.pdf>
- Thomas, L., Herbert, J., & Teras, M. (2014). A sense of belonging to enhance participation, success and retention in online programs. *The International Journal of the First Year in Higher Education*, 5(2), 69-80.  
<https://ro.uow.edu.au/cgi/viewcontent.cgi?article=1488>

- Thomas, L., Herbert, J. (2014). 'Sense of Belonging' enhances the online learning experience. Retrieved August 26, 2014. <https://www.theconversation.com>.
- Tiba, C., Condy, J., Chigona, A., & Tunjera, N. (2015). Digital story telling as a tool for teaching. Preceptions of pre-service teachers. *TD: The Journal for Transdisciplinary Research in Southern Africa*, 11(3), 285-301. <https://doi.org/10.4102/td.v11i3.68>.
- Tovar, E. (2013). A conceptual model on the impact of, mattering, sense of belonging, engagement/involvement and socio-academic integrative experiences on community college students' intent to persist. <https://doi.org/10.5642/cguetd/81>
- Vincent, E. A. (2016). Social media as an avenue to achieving sense of belonging among college students. *Vistas Online*, 1-14.
- Won, S., Wolters, C. A., & Mueller, S. A. (2018). Sense of belonging and self-motivated learning: Testing achievement goals as mediators. *The Journal of Experimental Education*, 86(3), 402-418. <https://doi.org/10.1080/00220973.2016.1277337>
- Yang, J.C., Quadir, B., Chen, N.S., & Miao, Q. (2016). Effects of online presence on learning performance in a blog-based online course. *The Internet and Higher Education*, 30(1), 11-20. <https://doi.org/10.1016/j.iheduc.2016.04.002>
- Young, S., & Bruce, M. A. (2011). Classroom community and student engagement in online courses. *Journal of Online Learning and Teaching*, 7(2), 219-230.
- Yu, A. Y., Tian, S.W., Vogel, D., & Kwok, R.C.W. (2010). Can learning be virtually boosted? An investigation of online social networking impacts. *Computers & Education*, 55(4), 1494-1503. <https://doi.org/10.1016/j.compedu.2010.06.015>



## Appendix A

### Practical Application of Social Media

#### 1. Strategies to leverage Twitter in Online Courses:

The blog talks about utilizing twitter as a means of interactive communication between students and teachers. Though at first, it may seem like Twitter is an application that can be used for recreational purposes only, its uses exceed that and it can be a tool for effective management of classes. The article goes on to list down 15 ways in which Twitter can be used as an educational tool; the methods range from giving out homework assignments to searching for educational resources to organizing contests to using specific hashtags to stay up to date with the latest information.

<https://elearningindustry.com/15-ways-twitter-in-education-students-teachers>

#### 2. Strategies to leverage Facebook in Online Courses:

This online article focuses on exploring Facebook in educational settings. It goes on elaborate that Facebook can be used for interactive online discussions; as a means of sharing information; and an effective method for teachers to communicate with their students.

It then lists down ten ways in which Facebook can be used to manage classes. These methods include creating dedicated Facebook groups for specific tasks like classwork, using the news feed feature to stay updated with current affairs, following people who hold relevancy, learning several different languages through online communication, using polls for certain tasks, and sharing media resources.

<https://www.zdnet.com/article/ways-to-use-facebook-effectively-in-class/>

### **3. Using Instagram as a teaching and research tool: tips, resources, and best practices:**

This article goes into detail about Paige Brown's work who is an experienced social media user in educational settings. There are details given about Brown's work who focuses on Instagram as a means of communication and a teaching tool. She gives two reasons for preferring Instagram over other social media sites, first that all her students were on the platform, and second that she finds pictorial or visual representation much more effective and concise. She further elaborated that it is important to build an online community and bonding for such practices to work and the teacher should always be aware of their purposes aligning with specific features on the site.

<https://medium.com/@aiaddysonzhang/using-instagram-as-a-teaching-research-tool-tips-resources-best-practices-8f1e2ae7bc20>

### **4. Strategies to leverage YouTube in Online Courses:**

This blog post explains how YouTube has become a leading platform for providing educational content. It is stated that YouTube is an incredibly popular and accessible website that can be used in online courses for teaching purposes. It cites a Forbes study that found that 52% of people watch work-related videos on YouTube.

There are 3 reasons given as to why YouTube should be used in online educational settings. First is that there is unlimited content that can be shared, there is an excess of resources on the site which are all readily available and growing by the minute. Second is that it is the perfect solution for distance learning using mobile phones, there is now better privacy and control so users can use their phones to access data at any time. Lastly, the third reason is that it is easy to use and integrate, there

can be any number of videos created for learning purposes that provides flexibility and control.

<https://coursegenius.com/blog/3-reasons-use-youtube-your-online-courses>