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# iGeneration Students' Approach to Technology as a Learning Tool, With an Affinity for Social Media Technology

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# iGeneration Students' Approach to Technology as a Learning Tool, With an Affinity for Social Media Technology

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iGeneration Students' Approach to Technology as a Learning Tool,

With an Affinity for Social Media Technology


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Concordia University – Portland

College of Education


Dissertation submitted to the Faculty of the College of Education

in partial fulfillment of the requirements for the degree of

Doctor of Education in Teacher Leadership

Connie S. Greiner, Ed.D., Faculty Chair Dissertation Committee

Therese Kanai, Ph.D., Content Specialist

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Portland, Oregon

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**Abstract**

The purpose of this survey design study, with a qualitative follow-up component of teachers' perspectives, was to determine if educators' assumptions about iGeneration students' use of technology reflects the students' actual behaviors when using technology inside and outside the classroom.  The literature review highlighted relevant assumptions in regard to behaviors of the iGeneration students and their attitude towards technology from a holistic point of view.  A survey design study was conducted to identify the interaction effect between teachers and students with consideration to different teaching approaches and delivery of content as use of educational technology per teacher differs. The methods of data collection were questionnaires, surveys, observations, interviews, and a pilot group with a validation process via triangulation, a process that aligns conceptual and methodological illustrations of human behavior when collecting measurable and comparative data.  The conclusion provided an insight of how iGeneration students view modern day technology usage in the traditional classroom setting.

*Keywords*: digital literacy, education(al) software, education(al) technology, generation z, iGeneration, iGeneration student, peer pressure, pilot group, social media, virtual community

**Dedication**

This dissertation is dedicated to the ones I love and cherish the most, my family and life long friends. To my mother, Beverly McLaren, who ensured her only son received an education at the highest possible level regardless of the obstacles and self-sacrifices faced and endured as a single mother in a third world country, foregoing your own dreams to raise a clueless boy into an educated and self-sustained man.

To the Smith Family – Raphael [Daddio], Pearlie [Mommio], Sherrie [Big Sis] and Rohan [Brother Man] – you took a young boy in your home who started to give up on himself; provided him with food and shelter on the weekends, natured him, provided him with school supplies, encouraged him to look past life challenges and make something of himself. There are not enough kind words to express how much my mother and I appreciate what you have done for us over the decades.

To my dearest and lifelong friends, you have no idea how many struggles you have helped me through. Nicole Barned, without you so much of my accomplishments would not have been possible these last 15 years. Paulette Smith, your blunt, harsh words of encouragement over the past two decades keeps me moving forward and finding new challenges. Wendi Peart, we go months without a word to each other; but in my darkest moments since my 16$^{th}$ birthday, you are always there with words of wisdom regardless of wherever in the world we may be. Thank you Whatsapp!

Last, but surely not least, I dedicate this paper to my professor Dr. Connie Greiner who toiled countless hours for almost two years, grooming a clueless lifelong programmer from the British English system on the ways of writing a scholarly paper, in proper APA format, in American English and grammar. Without you, graduating may not have been possible.

**Acknowledgement**

I would like to acknowledge God and his son Jesus Christ, as they have given so much for me. Through Christ all things are possible and no evil shall deter me.  To my Aunt Jean and my big cousin Dawn, you have believed in me to succeed in life before the umbilical cord was cut, thank you for all the love since my birth.

Thank you to all those at Concordia University – Portland who provided support and facilitated my learning: Dr. Colleen Checho, Dr. William Hunter, Dr. Tony Valley, Dr. Mitzi Brammer, Dr. Kimberly Handy, Dr. Pat Orazio, Dr. Aaron Cooley, Dr. Andrew Alexson, Dr. Edward Kim, Dr. Meg Boice, Dr. Deborah Stone, Dr. Patricia Garcia, Dr. Therese Kanai, Dr. Ralph Spraker Jr., Dr. Anne Grey, Dr. Marty Bullis, Mrs. April Failing as well as Mrs. Michelle Liu for guiding me at the start of my doctorate journey.

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To Taneisha Coleman, Raneque Whyte and Tonisha Morrison; you have all supported me on this doctorate journey over the last four years. You have all made sacrifices of your own, may it be in simple forms such as staying-up late at night to ensure I stayed awake to complete papers and turn them in on time. Life may have taken us down separate paths, but your acts of kindness will never be forgotten.

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**Chapter 1: Introduction**

**Introduction to the Problem**

According to Perrin (2015), over 70% of social media teenagers contribute to the traffic on the Internet. In the 21st century, teenagers between the ages of 14 and 16 are involved in a never-ending, ever updating, always evolving, and continuously expanding world of social media exposure. Humans born post year 2000 are considered part of the iGeneration era; humans born post 1990–1995 are considered part of the Generation Z era (Ahn, 2011; Chewning, 2015; Gikas & Grant, 2013). The problem is, Generation Z has capitalized on and contributed to the wave of technological enhancements post-2005, but the iGeneration seems to be more fascinated and involved with social media contributions rather than educational technology enhancements.

Ahn (2011) stated that teenagers are the most prolific users of social media networks as emerging studies showed youth of the iGeneration spent a considerable portion of their daily life interacting through social media. Due to students' firm entanglement with social media, this development seems to have made teaching with technology difficult for teachers who are already utilizing technology in their classrooms. Teachers who are not technologically savvy are having greater difficulty delivering lessons to the iGeneration students. Default behavior towards educational tools/software by iGeneration students displays a "collective" nature of resistance toward virtual/mobile learning; default behavior towards social media tools/software by iGeneration displays a "collective" nature of shared attraction to virtual social interactions. According the Jenkins (2006), "If students are not allowed to use new technologies and contribute to online communities like SNS [Social Network Sites], they will not be able to develop the necessary skills and technical literacy that will be vital in the future"(as cited in Ahn, 2011, p. 1438).

**Background, Context, History, and Conceptual Framework for the Problem**

This study highlighted reasons for the shared resistance of high school students, ages 14 to 16, toward using technology as an educational tool versus a virtual socialization medium. The study aimed to discover the reasons for the shared resistance and uncover solutions to allow for effective and meaningful learning through technology within classrooms. The study employed a survey design, with a qualitative follow-up component, of the participating teachers' perspectives with the goal of informing classroom instruction.

Technology usage among present day teenagers is an expectation rather than a privilege, when comparing present day standards and norms to pre-iGeneration students. Another difference the study considered is the present day teacher. More teachers are utilizing technology in their classrooms. "Learning Management Systems do not create learning of themselves, rather they provide a set of tools that are capable of supporting a variety of learning activities" (Parkes, Reading, & Stein, 2010, p. 2). Although the technology may not be inclusive of a social media element, the technology is being used as an educational tool and outlet to the extent understood by the teacher.

The study addressed the problem of learning with educational technology tools within the classroom, at home, or other possible learning environments. According to Chewning (2015), the U.S. Department of Education in 2010 acknowledged a challenge for the education system is to leverage the learning sciences, as well as modern technology, in order to create engaging, relevant, and personalized learning experiences for all learners that reflect the real world and the reality of students' futures. "As a consequence, it was necessary to situate and develop the e-learning competencies within an appropriate learning paradigm. Social constructivism was selected as the paradigm due to its complementarity with e-learning" (Parkes et al., 2010, p. 2).

Thus it appears that iGeneration student's social constructivism, competencies and peer development seem to be socially stimulated, driven, and modeled through virtual environments.

In contrast to the traditional classroom, methods encouraging learning through technological tools require student-centered learning, as well as students' empowerment during content delivery; "we put students at the center and empower them to take control of their own learning by providing flexibility on several dimensions - U.S. Department of Education (2010)" (Chewning, 2015, p. 1). Chewing (2015) and Luccio (2016) highlighted two areas of concern for educators of iGeneration students; as administrators we encourage and empower students to take charge of their learning opportunities thereby challenging educators to be/become more flexible. But as educators and facilitators of learning, we get caught in an unfamiliar scenario where the technological tools required/requested for student-centered learning by the iGeneration student is unknown to the educator/facilitator or the tool is unconventional for the traditional classroom.

**Statement of the Problem**

It is not fully known to what extent iGeneration students' use of social media detracts interests from learning with educational technology tools. Abu-Shanab and Al-Tarawneh (2015) warned of the imperatives to realize that the time spent on social activities (using Facebook or other social media) by iGeneration students will affect academic performance; as students spend more time on social media they spend less time studying and practicing.

Present day social media has evolved exponentially during the last five years, 2012 to 2017. In 2006 Furr, Ragsdale, and Horton (2005) stated, "educational technology has become big business" (as cited in Carter, 2014, p. 4) and these claims combined with the fact that many of the products are available for free or at very low cost to schools, have made them attractive choices for teachers (Carter, 2014). A decade later, social media giants such as Facebook,

Instagram, SnapChat, and Twitter generate a minimum income of one million U.S. dollars a day according to the public financial end of quarter reports for 2015 (Wan & McNally, 2015). As a result, the emergence of social media placed an enormous strain on the educational technology development market.

Educational technology software companies that predicted lucrative returns in 2006 seem to no longer exist, as evidence of their existence is difficult to find a mere decade later. As social media giants dominate the mobiles, tablets and other electronic devices of iGeneration students, education technology developers have been struggling to cope (Wan & McNally, 2015). Evidence of this exists within the multiple mergers and buy-outs of EduTech based entities such as Edusight being acquired by GradeBook, or Authentica being acquired by BrightBytes, or Pearson selling sections of EduTech services to Byju, or Hero K12 openly stating in May 2017 that they are willing to spend US$150 million to acquire as many educational technology companies as possible in an effort to continue developing products that will digitally aid learning in the classroom (Wan & McNally, 2015). Large spending efforts from education technology companies are aimed at a market of iGeneration students' who use social media, and who are distracted from learning with technology tools. Companies such as GradeBook and Byju seemed to have accepted the challenge of reengaging iGeneration students learning through technology (Wan & McNally, 2015).

**Purpose of the Study**

The purpose of this survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design was to determine if educators' assumptions about iGeneration students' use of technology reflects the students' actual behaviors when using technology inside and outside the classroom. Researchers have understood that, "technology may

generally directly contribute to production (Romer 1990). But in education there are still strong concerns regarding the value of digital technology for learning (Cuban 1999, 2001; Dynarski et al. 2007)" (as cited in Frank, Zhao, Penuel, Ellefson, & Porter, 2011, p. 138).  The presence of technology in schools naturally leads to changes in pedagogy.  Enhancements in technology may translate to changes in instruction and content delivery; but not all changes are good, meaningful, or beneficial for pedagogy.  Wallace (2004) stated aspects of teaching with the Internet have an impact on generic tasks of teaching and on subject-specific pedagogy.  Wallace (2004) argued that there is a need to look closely at the work of teachers to better understand what knowledge is brought to bear as they teach with the Internet.

**Research Questions**

The following research questions guided this survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design:

1. How do iGeneration students describe their use of social media software and technology?

2. How do iGeneration students describe their use of educational technology tools and software *within* a class/school environment?

3. How do iGeneration students describe their use of educational technology tools and software *outside* of class/school?

4. How do *teachers* of iGeneration students describe the students' use of educational technology tools and software in the classroom?

**Rationale, Relevance, and Significance of the Study**

Young people invited to use new technologies often take the technologies in unanticipated directions; this uncertainty makes new tools and media fascinating and frightening (Zhao, Tan, & Mishra, 2000). The literature review will highlight the relevant assumptions in regard to behaviors of the iGeneration students and their attitude towards technology from a holistic point of view. The purpose of the study will be to determine if educators' assumptions about iGeneration students' use of technology reflects the students' actual behaviors when using technology inside and outside the classroom. There is a need to determine if the intentions for educational technology in regards to pedagogy hold valuable significance. A successful outcome of using technological learning tools with iGeneration students whom are attracted to the current social technology era is the desired outcome for teachers of iGeneration students. This survey design study sought to find or create a meaningful pathway for finding the answer(s).

**Definition of Terms**

*Educational Software*: A type of computer software designed with the primary purpose of teaching or self-learning ("Educational Software," n.d.).

*Education(al) Technology:* The Association for Educational Communications and Technology defines Educational Technology as the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources (Robinson, Molenda, & Rezabek, 2008).

*Education(al) Technology Tools:* Educational technologies are tools, techniques, or processes intended to improve learning within or outside traditional learning environments such as classrooms (Robinson et al., 2008).

*iGeneration Students:* Students born as early as the year 2000/2001, but no later than 2015. iGeneration students tend to have a natural adaptation towards learning, understanding, and pushing technological innovations beyond intended use in a short period of time (Abu-Shanab & Al-Tarawneh, 2013; Abu-Shanab & Al-Tarawneh, 2015; Ahn, 2011; Carter, 2014; Chewning, 2015; Gikas & Grant, 2013; Tarantino, McDonough, & Ma, 2013; Veletsianos & Kimmons, 2016).

*Pedagogy:* The method and practice of teaching, especially as an academic subject or theoretical concept (Pedagogy, n.d.; Chewning, 2015).

*Pilot Group:* Pilot groups are used to refine research instruments, such as questionnaires and interview schedules (Sampson (2004). Creswell (2013) stated, pilot groups are selected on the basis of convenience, access, and geographic proximity, to refine and develop research instruments, assess the degrees of bias, frame questions, collect background information, and adapt research procedures.

*Social Media:* Computer-mediated technologies that allow the creating and sharing of information, ideas, and other forms of expression via virtual communities and networks (Ahn, 2011).

*Software Attribute:* A specific element(s) that defines the purpose, usefulness or differentiating factor of a single software from all other related software. Attributes may also be considered as values (Carter, 2014; Gikas & Grant, 2013; Parkes et al., 2010; Perrin, 2015; Picciano, Seaman, & Allen, 2010).

*Teacher Perception:* A teacher's belief regarding the educational environment associated with specific behaviors of iGeneration students, with particular regard to educational technology (Chewning, 2015; Ilomäki, 2008).

*Virtual Socialization:* A virtual community formed via a social network of individuals who interact through specific social media for a variant of reasons (Abu-Shanab & Al-Tarawneh, 2013; Abu-Shanab & Al-Tarawneh, 2015; Ahn, 2011; Carter, 2014; Kimmons, 2014; Tarantino et al., 2013; Veletsianos, 2012).

**Assumptions, Delimitations, and Limitations**

Prior research has indicated the need for educators to transform themselves in order to get the best out of their students in the age of mandatory digital literacy (Gikas & Grant, 2013; Ilomäki, 2008; Kimmons, 2014; Robinson et al., 2008; Tarantino et al., 2013; Veletsianos, 2012; Wallace, 2004); this transformation is required on a larger scale as technology is available and implementable at lower costs. Future development should concentrate on the transformation of teaching and learning practices to better meet the challenges of modern society; and moreover, the children of the future (Gikas & Grant, 2013; Ilomäki, 2008; Kimmons, 2014).

A delimitation of the study was, teachers use and utilization of educational and social technologies to enhance student learning within and outside traditional learning environments and settings. Neither my purpose nor my intention was not to influence or suggest a specific use for educational or social technology to teachers participating in the study.

A limitation of the study was the unrivaled fact that technology is moving faster than teachers are able to learn, develop, and deliver meaningful content with new technology within a specific timeframe. Meaning, teachers use of technology may be utilized at various level of expertise, and that possibly could have influenced participating students responses. Another limitation was, a meaningful lesson today with the use of current technology within the present semester would consist of outdated technology and disengaged or disconnected students the following semester, as the technology may have evolved twice since the initial planning stage of

the lesson and the initialization of the study (Gikas & Grant, 2013; Kain, Rivkin, & Hanushek, 2004; Robinson et al., 2008; Wallace, 2004).

**Chapter 1 Summary**

Technology is everywhere. The greatest innovators of technology in the modern day are those born in the Generation Z era; the largest users of technological innovations are those born in the iGeneration era (Kimmons, 2014; Tarantino et al., 2013; Veletsianos, 2012). Traditional teachers of iGeneration students seem to struggle in their attempts to make *lasting* engaging and meaningful lessons with software that will remain meaningful throughout an entire academic year (Gikas & Grant, 2013; Ilomäki, 2008).

Younger, modern day teachers born early in Generation Z and who are able to keep up with the changes in technology find themselves focusing on keeping current, with little time to enhance lessons or to create in-depth lessons that will remain relevant for an extended time. Additionally, teachers born in the era of Generation Z tend to spend an average two to five years in the classroom before changing to careers outside of education (Kain et al., 2004; Tarantino et al., 2013).

Teachers need to understand how content, pedagogy, and technology interact before they can successfully integrate technology as a tool to extend and enhance student learning (Chewning, 2015). This study sought to understand if the modern day teacher must first understand content and pedagogy, as well as, if the seasoned and traditional teacher must first understand technology, before either stands a chance of being successful educators to the dynamic iGeneration student.

## Chapter 2: Literature Review

**Introduction to the Literature Review**

Technological advancements have rapidly evolved since 1980 via the popularity of Graphic User Interfaces (GUI) globally introduced by Bill Gates and his Microsoft Corporation with the introduction of Windows 95 software. Although Windows 95 was not the first GUI offered to consumers, Microsoft capitalized on making the software user friendly. Technological experts will inform the average user that Xerox first introduced the concept of a desktop device with a mouse via the Xerox Alto in 1973 (Raymond & Landley, 2004). The concept was enhanced by Apple Computers led by Steve Jobs with the release of Apple Lisa in 1983. Bill Gates' impeccable timing with Windows 95 resulted in reaping all the fame and benefits (Raymond & Landley, 2004). GUI is a strong factor, as well as a driving force, behind the popularity of many software versions in education and virtual socialization.

Human beings born after 1995 are considered Generation Z (post Generation Next); individuals born after 2000 are considered to be the first of the iGeneration. Generation Z and iGeneration Internet users account for approximately 70% of today's Internet traffic. Traffic caused by social media usage via mobile devices averages 90% in volume by iGeneration and Generation Z users (Perrin, 2015). The Internet appears to have been molded in a social haven by Generation Z and firmly utilized by the iGeneration. Due to the fact that technology via the Internet has educational purposes, this literature review will decipher if iGeneration users between ages 14 and 16 are aware of such educational advancements hidden among the ocean of social media distractions. Potential long-term impact of mobile computing devices on the higher educational learning environment is yet to be determined (Gikas & Grant, 2013).

From my experience as an educator in the field of business studies and various

technology-based subjects over the past decade, the default behavior towards educational

tools/software by iGeneration students seemed to display a nature of shared resistance toward

virtual/mobile learning; and the default behavior towards social media tools/software by the

iGeneration students displayed a shared attraction toward virtual socialization. It is my belief

there are concise reasons for the shared resistance of high school students, ages 14 to 16, toward

using technology as an educational tool versus a virtual socialization medium (social media);

however, the reasons must be discovered to aid the growth and future of learning for iGeneration

students. In my role as an educator, I have observed iGeneration students' fascination and what

appeared to be their preference to socialize through screens. I wanted to understand more fully

why iGeneration students disconnect from learning with technology during lessons and the

reasons influencing the behaviors I have seen. I thought that encouraging and educating teachers

of iGeneration students about the drawbacks of the educational tools and the elements required

for success might reduce the student's shared resistance toward virtual/mobile learning.

"Researchers must take an integrated approach to exploring SNS [Social Network Sites] effects.

The technology alone is not likely to cause social outcomes, such as wellbeing or learning"

(Ahn, 2011, p. 1444). While one of the anticipated outcomes of social media use is the

democratization of knowledge, sharing, and participation, the impact of social media use upon

education cannot be ignored (Veletsianos & Kimmons, 2016). Future development should

concentrate on the transformation of teaching and learning practices to better meet the challenges

of modern society and the children of the future (Ilomäki, 2008).

**Conceptual Framework**

Technology usage has become embedded within the daily activities of 14–16-year-olds.

The act of virtual socialization among teenagers in the present era is as common, and as normal,

as a weekend afternoon nap was for earlier generations. As noted by Lenhart, Purcell, Smith, and Zickuhr (2000), results of a national survey conducted in 2009 indicated 73% of online teenagers used social network sites (SNS), an increase from 55% in 2006 (as cited in Ahn, 2011, p. 1435). Ahn (2011) stated the research showed youths connected to these global online communities is a frightening prospect for parents and educators, and an intriguing area for social science research.

Technology usage among 21st century teenagers is seemingly an expectation rather than a privilege, when compared to present-day standards and norms to pre-iGeneration. "Teenagers are among the most prolific users of social network sites (SNS). Emerging studies find that youth spend a considerable portion of their daily life interacting through social media" (Ahn, 2011, p. 1435). The participants in this survey design study were iGeneration teenagers born between the years 2001 and 2004; with a qualitative follow-up component of teachers' perspectives of the iGeneration teenagers' responses.

Ilomäki (2008) noted that, "The large majority of teachers have sufficient skills for everyday and routine working practices, but many of them still have difficulties in finding a meaningful pedagogical use for technology" (p. 1). In the present day of 2017, teachers have adapted and introduced a number of educational tools that utilize technology with pedagogy, thereby eliminating the difficulties noted by Ilomäki (2008) almost a decade earlier. "Today, 90% of young adults use social media, compared with 12% in 2005, a 78-percentage point increase. At the same time, there has been a 69-point bump among those ages 30-49, from 8% in 2005 to 77% today" (Perrin, 2015, p. 3). Perrin's (2015) data proved teachers have made an effort to meet and accommodate iGeneration students within their comfort zone. From my observation, efforts from teachers were failing, thus a primary reason for this research. Some educational tools such as Blackboard, Edmodo and Google Classroom incorporate social media

aspects and elements in an effort to attract and keep iGeneration students engaged and motivated about his or her own learning.

Ahn (2011) argued, "Media effects scholars in a variety of fields have quickly come to realize that the answers to these questions are more complex" (p. 1435). A direct causal relationship between a technology and a social outcome, such as learning, occurs rarely, if ever (Clark, 1983, 1991; Schmidt & Vandewater, 2008, as cited in Ahn, 2011, p. 1435). While studying the participation and practices of higher education scholars on Twitter, Veletsianos (2012) questioned the learning techniques, delivery of content, academic concepts, and the style of response and feedback that could possibly explain the relationship between technology and virtual socialization of the scholars. The theory derived by Veletsianos and Kimmons (2016) suggested a parallel agreement with Ahn (2011) and Gikas and Grant (2013) that through the availability of social media and the social learning capabilities offered by the various forms of virtual social environments, the potential long-term impact was yet to be determined, and what could be possible in the present day through a virtual social and learning environment if this could be made available within higher educational learning. Social learning theory supported and promoted networked participation on social media; this lead to learning and knowledge in networked spaces being facilitated, negotiated, and co-constructed individually, as well as socially (Brown, Collins, & Duguid, 1989; Lave & Wenger, 1991; Wenger, 1998, as cited in Veletsianos & Kimmons, 2016). This meant a strong and self-sustained network of active and participating educators sharing knowledge in a virtual environment is highly recommended and encouraged for the betterment and the future of education.

Veletsianos (2012) noted that learning in online networks becomes a situated activity that takes the form of participation in the socio-cultural practice of scholarship; thereby, stating

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online social networks serve as "emerging and evolving network[s] of scholar–learners where scholarly practices may be created, refined, performed, shared, discussed, and negotiated" (as cited in Veletsianos & Kimmons, 2016, p. 1435). Gikas and Grant (2013) gave a mindful direction to future researchers, stating: "Continuous research on mobile learning and social media can determine if true impact is being made on an instructor's teaching and the student's learning" (p. 25). Kainz (2011) emphasized that the mobile device is, "a contemporary paradigm for connecting, communicating and getting things done on mass-customized and yet personal relationship level that extends to the devices themselves" (as cited in Gikas & Grant, 2013, p. 25). As time, technology, and devices change, research questions and research techniques for finding answers should change in accordance.

**Review of Research Literature and Methodological Literature**

The methodological approach for this survey design study, with a qualitative follow-up component of teachers' perspectives of the survey data, adapted research strategies used by Frank et al. (2011), Legris, Ingham, and Collerette (2003), Veletsianos and Kimmons (2016), and Wallace (2004) as related to iGeneration students, teachers' use of technology, and the use of technology as a learning tool in the classroom. The nature of the research called for methods that could generate academic and/or theoretical constructs to explain issues of interest on the parts of students and teachers. Instead of collecting data to prove or disprove an underlying hypothesis, the study sought to understand the reasons or elements contributing to stated research problem. The origin of the problem for me lay in the following phenomena: teachers are teaching with technology, teachers have the necessary and required knowledge, students are capable and able to learn with technology, but even so using technology to effectively aide classroom instruction is observed as a difficult success to achieve. In order to develop an

answer about why achieving successful integration of technology was challenging for capable and qualified teachers, the study aimed to decipher why social technology was distracting for iGeneration students born in the technological era with access to the best educational tools and software, but underachieving in the classroom.

**Review of Methodological Issues**

      **Teachers versus student behavior with technology.** Legris et al. (2003) presented and researched two models that depicted peoples' use of technology, as well as how the technology was accepted. In the first model, Theory of Reasoned Action (TRA), the targeted beliefs and behavior depicted a behavioral approach to technology (see Figure 1). The second model, Original Technology Acceptance Model (TMA), accounted for external variables and the actual use of technology (see Figure 2).

| Beliefs and Evaluations | → | Attitude toward Behavior | → | Behavioral Intention | → | Actual behavior |
| Normative Beliefs And motivation to comply | → | Subjective Norm | → | | | |
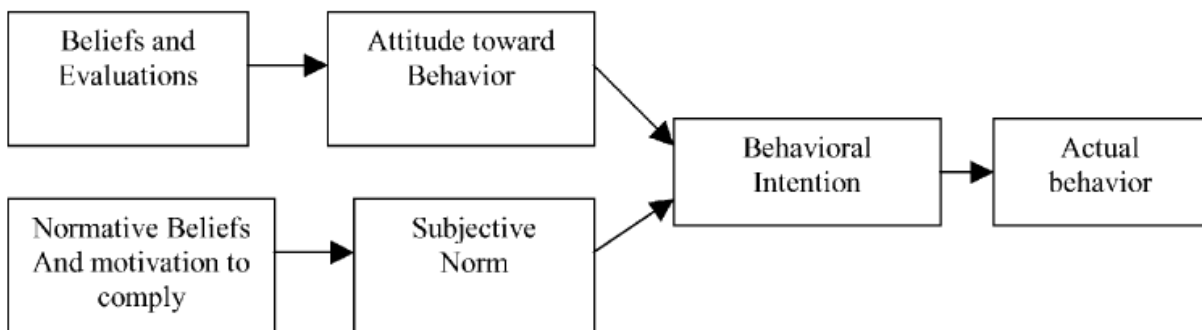
*Figure 1*. Theory of Reasoned Action. (Legris et al., 2003, pp. 192–193)

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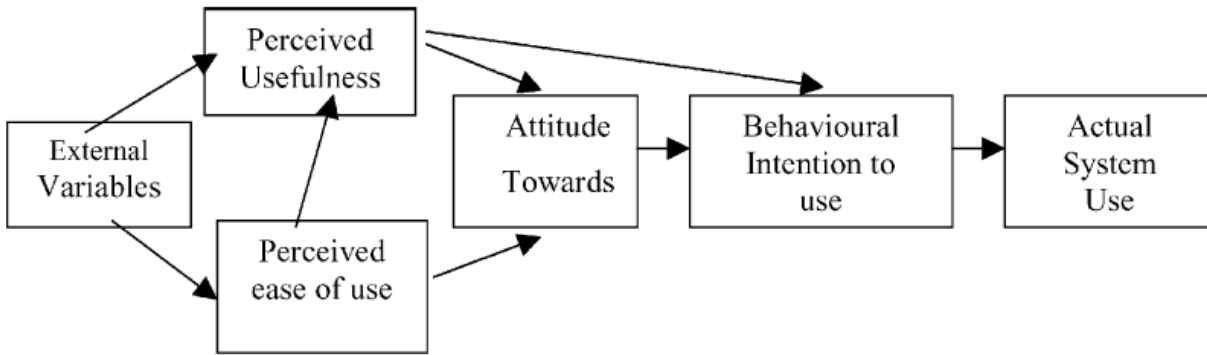
*Figure 2*. Original Technology Acceptance Model. (Legris et al., 2003, pp. 192–193)

According to Legris et al. (2003), Davis (1986) proposed the Technology Acceptance Model (TAM) in a doctoral dissertation.  Legris et al. (2003) noted TAM has been tested and extended by many researchers over the years and proven successful in "predicting about 40% of a system's use" (p. 192).  Legris et al. (2003) explained the difference and usefulness of both models when considering and utilizing Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) when studying human behavior and technology.

Legris et al. (2003) described how TAM was created to establish a foundation for finding the impact of external variables on internal beliefs, attitudes, and intentions.  PEOU and PU were identified as two important factors in explaining system use as suggested by TAM. External variables indirectly influence attitude, subjective norms, or relative weight in the case of TRA. Legris et al. (2003) noted Davis (1989) and Davis et al. (1989) proposed TAM could address why users accept or reject information technology.  Fishbein and Ajzen (1975) explained and predicted behaviors of people in a specific situation by adapting the original TRA model (as cited in Legris et al., 2003, p. 193).

The main issue of the methodology approach is during the timeframe of the research, technology continued to rapidly improve. "With the advent of mobile phones, especially smart phones, it is becoming easier to reach students and even utilize the capabilities of technology"

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(Abu-Shanab & Al-Tarawneh, 2015, p. 51).  Abu-Shanab and Al-Tarawneh (2013) noted that

improvements in physical technology contributed to the raise of social technology among

iGeneration students on personal devices, such as cell phones, rather than remaining and

depending on tablets or desktops. Social media technology evolved beyond the need for a

desktop computer, beyond the need for a tablet device as a support device on social media, and is

capable of functioning without restrictions on most smart mobile devices.

      Abu-Shanab and Al-Tarawneh (2013) detailed that in 2013 tablets were being

implemented as learning tools to iGeneration students in the 7th and 8th grade, but Abu-Shanab

and Al-Tarawneh (2015) highlighted that in 2015 tablets seemed to be a desire of the past; thus

the aspect of hardware preference among the students will have to be considered when analyzing

data for this research study. "Using mobile phones for texting and social network access also was

explored to see if it is related to the engagement level in classrooms, where research indicated

that engagement is closely related to teacher's style and control" (Abu-Shanab & Al-Tarawneh,

2015, p. 52).

      Another issue that proved to be a factor was the rate teachers evolved their own use of

technology in the classroom. Teachers do not switch to newer technologies as rapidly or as

frequently as iGeneration students. Teachers plan lessons and deliver accordingly to the content

required finding methods and techniques that work, thus remaining faithful and committed to a

proven technique (Frank et al., 2011). When comparing and contrasting data from students and

teachers, there may be bias on the part of the students in regards to the technology being used

and toward the teachers, but the collected data may not reflect that relationship (Tarantino et al.,

2013; Veletsianos, 2012; Zhao et al., 2000). The same may be expected from teachers of

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iGeneration students, as the teachers are familiar with a particular technology or learning tool students deem to be ancient, although the software may only be a few years old.

The purpose of the research was to identify possible trends in educational technology, in contrast to social technology, that present obstacles to learning with educational technology, thus the logical approach of focusing on social technology rather than the multiple factors highlighted by Frank et al. (2011). Kabilan, Ahmad, and Abidin (2010) stated, "Social media has also been implemented in academic settings to motivate students to participate, share, and learn with other collaborators" (as cited in Tarantino et al., 2013, p. 2). The end result of this research aimed to identify the relationship between social media and academia that could be utilized to keep iGeneration students engaged.

**Synthesis of Research Findings**

During the late 1990s, Zhao, Englert, Jones, Ferdig, and Chen (1998) started an archetypal or conventional relationship between technology and pedagogy for all students. According to Zhao et al. (1998), Krajcik, Blumenfeld, Marx, and Soloway (1994) and Peck and Dorricott (1994), several potential features related to instruction of students with disabilities related to use of technology during instruction:

- Engagement of students in investigating an authentic question or problem;
- Involvement of students in developing real solutions and artifacts that address particular questions or problems;
- Promotion of students' active learning through the use of cognitive and metacognitive tools in contextualized inquiry;
- Involvement of students in a process of inquiry in a community of learners as they collaborate with other students, teachers, and experts about the problem;

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- Construction of authentic knowledge-building and knowledge creating communities;

- Integrated emphases on reading and writing in authentic learning activities as part of an inquiry process; and

- Preparation of participants to participate in the information age (as cited in Zhao et al., 1998, p. 2)

Unfortunately for Zhao et al. (1998), not many individuals paid much attention to the proposed theory of technology being beneficial in the classroom. Zhao et al. (2000) stated, "When we invite young people to use new technologies, they often take them in directions we never anticipated. This uncertainty is what makes new tools and media fascinating and frightening" (p. 1).

In 2003, a simple question was asked and researched by Zhao and Frank (2003), "Why is technology *not* used more in schools? Many researchers have tried to solve this persistent puzzle" (p. 807). Wallace (2004) stated a year later, "The Internet is widely used in K–12 schools. Yet teachers are not well prepared to teach with the Internet, and its use is limited in scope and substance" (p. 487). Wallace (2004) curbed the focus from what could be, as presented by Zhao and Frank (2003), to what may be the possible impediment for technology not being used more in the classroom.

Ilomäki (2008) stated, "In designing educational technology applications, the theoretical questions of the researchers were framed around teaching and instruction (Brown & Duguid, 1993), which otherwise were less discussed during the early years of constructivism" (p. 19). According to Korte and Hüsing (2007), a 2006 survey revealed, "one fifth of teachers did not believe that using computers had significant learning benefits for students, and these teachers were from both the countries leading the use of ICT, and from countries lagging behind (as cited

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in Ilomäki, 2008, p. 68). According to Korte and Hüsing (2007), the leading countries from the 2007 data showed the highest percentages of teachers who use ICT in the classroom were in the United Kingdom (96%) and Denmark (95%), the lowest percentages in Latvia (35%) and Greece (36%) (as cited in Ilomäki, 2008).

Selwyn (2002) stated the myth of the omnipotent teaching and learning machine must be challenged by those within the educational community, and computers are (re)constructed and (re)contextualized along more appropriate and realistic lines (as cited in Ilomäki, 2008). "Future development should concentrate on the transformation of teaching and learning practices to better meet the challenges of modern society–and moreover, the children of the future" (Ilomäki, 2008, p. 68).

Frank et al. (2011) responded 3 years later in regard to targeting and researching effective teaching with the Internet and using technology in the classroom. Though the response from Frank et al. (2011) was simple, the research highlighted multiple factors from the student and teacher perspectives that complicated the possibility and effective use, delivery, and impact of technology in the classroom. The factors included, but were not limited to, teachers' technological teaching abilities, teaching style, and professional development. Frank et al. (2011) further examined research on teaching abilities and identified additional factors that may impact pedagogy beyond students' learning abilities, such as the use of technology by the teacher, and students' willingness to learn context in such a manner.

Characteristics of individual teachers affect implementation, including their willingness and ability to use technology, pedagogical style, and teacher preparation (Becker, 2000; Smith et al., 2007; U.S. Congress, 1995, as cited in Frank et al., 2011). Bidwell (1965) and Woodward (1965) noted program designs focused on the application of technology did not consider the

complexity of teaching; and Desimone, Smith, and Ueno (2006) and Penuel et al. (2007) concentrated on interactions among different aspects, such as teacher characteristics and professional development (as cited in Frank et al., 2011). Complexity of teaching is a product of many issues:

- Variability in student needs, which can influence decisions about what and how to teach (Barr & Dreeben, 1977, 1983; Delpit, 1988);

- Conflicts among organizational demands that arise from policies enacted at different levels of organization (Bidwell & Kasarda, 1987; Honig, 2006);

- Varying levels of coherence among curriculum, pedagogy, and assessments (Borman et al., 2003; Schmidt et al., 2001); and

- Teachers' unique educational trajectories, which expose them to varying educational approaches (Lortie, 1975). (as cited in Frank et al., 2011, p. 139)

Teaching is complex because teachers must adapt practices and coordinate with colleagues (Bidwell, 1965; Thompson, 1967; Woodward, 1965; Zhao & Frank, 2003, as cited in Frank et al., 2011). Teachers' implementation of new practices depends on their knowledge and interacting with students, and is much more than organizing a set of activities or delivering a particular curriculum (Shulman, 1986, as cited in Frank et al., 2011).

The combined impact of the literature reviewed above points to the fact that technology benefits a learning environment, but assessing the benefits on a wide scale was difficult as individual teacher objectives differ, teaching styles and delivery differ, and the technological requirements in relation to the lesson objectives differ, all based on the type and level of students in *that* teacher's classroom.  Korte and Hüsing (2007) noted, "teachers use computers in classroom often, but again, the differences among countries are remarkable" (as cited in Ilomäki,

2008, p. 31).

**Critique of Previous Research**

      To criticize previous research on the related matter and issues, one needs an objective stance, which may involve negative assertions. One could argue that with the rapid evolution of technology since the completion of the previous research the changes in technology has changed human behavior, thereby changing how iGeneration students learn. Zhao et al. (1998) asked questions about the potential merger between technology and pedagogy that went ignored and unanswered. Zhao et al. (2000) revisited the relationship between technology and learning, not pedagogy, as technology was evolving too fast to design a pedagogical strategy for teachers to adapt to or to confine students. Picciano et al. (2010) examined how education available online was transformed from the K−12 level and in higher education (K-20). Picciano et al. (2010) tracked the history of online learning for six years, plotting trends, and made predictions for the future. Digital literacy was one the most powerful tools any being was able to possess in the modern era. Criticizing an element that continues to evolve would be an unfair and unjust notion to those who have tried and failed from mere hindsight in order for others to learn, improve, and advance. Picciano et al. (2010) researched the patterns, trends, changes, and transformation of learners and educators over the last decade taking into account student satisfaction and challenges teachers face to adapt to the technology. Abu-Shanab and Al-Tarawneh (2015), Gikas and Grant (2013), Ilomäki (2008), Wallace (2004), Zhao et al. (1998), and Zhao et al. (2000) respective research revealed educators must know/learn how to keep abreast with the rapid technological changes, keeping in mind that a technique learned today with one group of students may be outdated when required to teach next year's group of students the same material. Educators must transform themselves in order to get the best out of their students in the age of

mandatory digital literacy.

Ilomäki (2008), Wallace (2004), Zhao and Frank (2003), Zhao et al. (1998), and Zhao et al. (2000) addressed the possibility of adequately learning with technology and found no proven solution capable of moving forward into the future.  Frank et al. (2011) and Picciano et al. (2010) identified and agreed with their predecessors that technology could contribute so much more to education; however Ahn (2011), Gikas and Grant (2013), and Veletsianos (2012) highlighted social media distractions that continue to rapidly evolve.  I agree with Picciano et al. (2010) that when referring to learning and teaching with technology, educators will have to adapt to the demands of the iGeneration learners; and the primary critique may be that educators cannot adapt fast enough to such a rapidly evolving concept. Still, it may be the case that they could make the necessary adaptations.

**Chapter 2 Summary**

The Internet has great potential. Since the development and revolutionized approach to Graphic User Interface (GUI) by developers, such as Xerox, Apple and Microsoft since 1973 (Raymond & Landley, 2004), the human race has continued to utilize and push the Internet to limits as far as they can think.   The Internet seems to be capable of more, thus humans push and develop even further.

The iGeneration of humans born after 2000 demand that the Internet become and remain a social heaven. This social demand is accompanied by seasoned educators making efforts to implement technology in the classroom. Dependability on rapidly evolving social technology seems to be the cause and effect of the iGeneration losing interest in technology as a learning tool or the Internet as a virtual learning environment. "The technology alone is not likely to cause social outcomes, such as wellbeing or learning" (Ahn, 2011, p. 1444).  While one of the

anticipated outcomes of social media use is the democratization of knowledge sharing and participation, the need for education to address this new focus cannot be ignored (Veletsianos & Kimmons, 2016).

Ahn (2011) and Perrin (2015) determined over 70% of the social media traffic on the Internet was contributed by teenagers.  When veteran teachers were attempting to adapt to the use of technology in their classrooms, Ilomäki (2008) determined teachers of iGeneration students were delivering meaningful lessons with the use of technology; however, students appeared to be disengaged when studied chronologically by Picciano et al. (2010), Ahn (2011), Frank et al. (2011), and Gikas and Grant (2013).  The common element presented among researchers was the use and rapid evolvement of social media technology.

Gikas and Grant (2013) warned of the possibilities to come if social media technology denominated learning technology; the researchers also highlighted that, "Continuous research on mobile learning and social media can determine if true impact is being made on an instructor's teaching and the student's learning" (p. 25).  Ilomäki (2008) before Gikas and Grant (2013) stated future development should concentrate on the transformation of teaching and learning practices to better meet the challenges of modern society and children of the future.

**Chapter 3: Methodology**

**Introduction to Chapter 3**

This survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design, was derived from my experiences as an educator of technology-based subjects. Recognizing the rapid changes occurring within my classroom as well as peers' technology-friendly classrooms, observing an increase in research material focused on the difficulties of learning/teaching with educational technology (Frank et al., 2011; Ilomäki, 2008; Veletsianos & Kimmons, 2016), and the desire to answer questions posed by Gikas and Grant (2013), Zhao et al. (1998), and Zhao et al. (2000) in accordance to present day practices and classroom norms. Although teachers of various subjects were willing to accept and use technology within the classroom, as a teacher of technology, I was faced with challenges from the rapid integration and structural availability of devices due to an endless evolution of technological growth. Students would make recommendations for new software and devices to gain and hold their attention during lessons, but with the drawback of daily recommendations before the first recommendation could be mastered or adequately learned. Young people use new technologies and often take the technologies in unanticipated directions; this uncertainty makes new tools and media fascinating and frightening for educators (Zhao et al., 2000).

The literature review highlighted the types of behaviors iGeneration students and their attitude towards technology from a holistic point of view. The literature review stated the default behavior by iGeneration students towards educational tools/software seems to display a shared resistance toward virtual/mobile learning (Abu-Shanab & Al-Tarawneh, 2015; Ahn, 2011; Tarantino et al., 2013). In regards to social media tools/software, the iGeneration students seem to display a shared attraction toward virtual socialization (Kimmons, 2014; Tarantino et al.,

2013; Veletsianos, 2012).  Using survey techniques and interviews, this study sought to identify the concise reasons for the shared resistance of high school students ages 14 to 16 toward using technology as an educational tool versus a virtual socialization medium (social media). Educators state an advantage of using social media within academia allows multiple students to simultaneously discuss and interact with the same content (Tarantino et al., 2013); disadvantages are the types of virtual socialization open to the students.

**Research Questions**

The following research questions guided this survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design:

1. How do iGeneration students describe their use of social media software and technology?

2. How do iGeneration students describe their use of educational technology tools and software *within* a class/school environment?

3. How do iGeneration students describe their use of educational technology tools and software *outside* of class/school?

4. How do *teachers* of iGeneration students describe the students' use of educational technology tools and software in the classroom?

**Purpose and Design of Study**

The purpose of this survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design, was to determine if educators' assumptions about iGeneration students' use of technology reflects the students' actual behaviors when using technology inside and outside the classroom.  It is not known to what extent iGeneration students' use of social media detracts interests from learning with educational technology tools.

Methods described in this chapter were adapted from strategies performed by Frank et al. (2011), Legris et al. (2003), Veletsianos and Kimmons (2016), and Wallace (2004) as related to iGeneration students, teachers' use of technology, and the use of technology as a learning tool in the classroom.  This study was designed to seek a better understanding of the complex relationship between teachers, iGeneration students, and educational technology (Wallace, 2004).  Teachers and students meet routinely in predetermined locations, where teachers aim to deliver engaging lessons and students are expected to collect and make the best use of the knowledge and experiences being relayed to them.  Researchers have theorized that educational technology *could* and possibly should allow and enable teachers to relay knowledge and experiences more efficiently to students (Legris et al., 2003; Wallace, 2004).  A decade after theorizing what should have been, technology has appeared to strain the relationship between the teacher and the student rather than bridge the gap (Carter, 2014; Chewning, 2015; Frank et al., 2011; Gikas & Grant, 2013). From my own experiences in the classroom, I decided to conduct an investigation to aid in determining and understanding why this happened.

Investigative research was conducted to identify the interaction effect between teachers and students, as no two classrooms are identical.  Teachers' approach, delivery, and use of technology differs.  Administrators and institutions need to be careful when attempting to appoint, designate, or nominate technologies for educational purposes because each brings an entire host of embedded values and expectations that may likely be problematic and contrary to meaningful learning and professionalism (Kimmons, 2014).  Experimental research, as defined by Adams and Lawrence (2014), examines the relationship between two or more variables and can demonstrate causation (a connection or correlation), as an experiment may progress beyond predictions and the explanation of relationship between two variables.  I decided to adopt Adams

and Lawrence's (2014) approach of examining relationships between two or more variables for this investigation.

**Research Population and Sampling Method**

The research population of the study was 9th and 10th grade iGeneration students, as well as teacher of the iGeneration students, enrolled at an international school during the 2016/2017 academic year. At the school, non-Muslim students are grouped to take technology as a yearlong course, whereas practicing Muslim students take technology in a single semester and Religion Studies in another semester. The yearlong technology group was used as the population sample.

**Instrumentation**

The instrumentation for the study included: questionnaires, surveys, observations, interviews, and a pilot group.

- A questionnaire was given to high school teachers of iGeneration students in the 2016/2017 academic year. The results were divided into variables related to teachers using technology as an educational tool.

- Surveys were discussed with the pilot group to review terminology used in responses by participating iGeneration students. Surveys were discussed with participating teachers of iGeneration students in an effort to make connections with the students' point-of-view and experiences as well as the teachers' point-of-view and experiences when learning with educational technology.

- Observational data were collected from high school teachers of iGeneration students in the 2016/2017 academic year. Data were compared and contrasted to the questionnaire data collected in the 2016/2017 academic year. The findings of the observation revealed if the intentions for educational technology outlined in the

questionnaire were performed as intended in the classroom.

- Interviews were conducted with high school teachers of iGeneration students in the 2016/2017 academic year. Using the data collected from previous questionnaires and observations aided to identify the elements contributing to, or restricting, the success of technological learning tools with iGeneration students entrenched in the current social technology era.

- High school 9th and 10th grade iGeneration students completed the initial survey in the 2016/17 academic year. The survey results were used to determine the relationship students have using technology as an educational and social tool.

- Discuss the survey results with participating teachers of iGeneration students, in an effort to make connections with the participating students point-of-view and experiences, as well as the participating teachers point-of-view and experiences when learning with educational technology.

**Data Collection**

The approach for data collection was direct interaction with individuals in a pilot group setting. Student data were collected via class groups of respective teachers at the same scheduled class time. Collecting data at identical scheduled class times ensured that data from a single student would not be collected more than once. The teacher was used as the pivot for the survey environment, as an individual student should not have the same subject with the same teacher more than once. Surveys were constructed with short answer questions, open-ended questions, and Likert-type questions. Observations were impromptu for students in an effort to capture data from their natural environment, meaning, students were not informed prior to observations as to have a "natural" an environment as possible but teachers were made aware prior to the exercise.

A portion of the observation sheet focused on teachers and the education technology environment they organized, while other factors focused on students within the environment (see Appendix A). Questionnaires were informal and were repeatedly modified based on the responses and the actions of the G9 and G10 students observed; in some instances the questions posed were random in order to capture data and or feedback on what was happening in real time.

Data from the questionnaires was later transformed to the initial survey and the survey results were then discussed in detail within this study. The formulation and assessment of survey questions, as well as, language usage and language content were directly focused toward the pilot group. The pre-survey interview and post-survey interview were directly focused toward the participating teachers. Responses from the pre-survey interview in relation to the data gathered from observations aided in shaping the study survey.

**Pilot phase.** This portion of the research protocol entailed gathering information and analyzing the survey design with a pilot focus group that comprised 14 iGeneration student participants. The pilot phase had three stages; Pilot Phase A, Pilot Phase B, and Pilot Phase C. Each pilot phase comprised of two sessions each with each of the pilot phase participants, for a total of six sessions. Pilot Phase A focused on getting to know the pilot group participants, explaining the purpose of the research study, the do's and don'ts of being a pilot group participant, informing the participants of their rights to leave or abandon the group if they ever feel the need to do so, discussing how iGeneration students typically use social media technology and educational technology on a daily basis within school and outside of school. Pilot Phase B focused on terminology and word choice for the final version of the survey to be distributed to the student participants. Pilot Phase B also focused on assessing the distribution options offered by Qualtrics, as well as analyzing the student participants' in-survey options, in-survey

functionality, and in-survey restrictions. Pilot Phase C was conducted following the survey and the pilot group aided in decoding the slang terms of the survey respondents, analyzing and identifying specific reasons for certain responses, clarifying confusing or unclear verbal responses, and explaining in layman terms the logic or reasoning to selected questions.

**Teacher group interviews.** Teacher group interviews occurred in two phases; Phase I and Phase II. Phase I of the teacher group interviews comprised of meeting the teacher participants, explaining the purpose of the research study, distribution and signing of teacher consent forms (as well as student ascent forms), arranging times for classroom observations, and conducting the teacher pre-survey interviews. Phase II of the teacher group interviews included a post-survey interview and a teacher-feedback session to review the aggregated results of the survey taken by the iGeneration students. Teacher participants had the opportunity to reflect and respond to the survey results from the perspective of an iGeneration teacher.

## Identification of Attributes

The study was designed to examine the relationship between teachers, edu-tech (educational technology), G9 (9th grade students), and G10 (10th grade students). Educational technology considered for this study was hardware and software utilized by participating teachers.

## Data Analysis Procedures

**Qualitative.** Data were gathered using questionnaires, observations, interviews, and a pilot group between the participating students and teachers. Interviews were pre-arranged with each of the teachers and approximately four to six students from each of the eight class sections (approximately 32 to 48 students; 4 students within 8 sections or 6 students within 8 sections respectively). The interviews were recorded and later transcribed verbatim. The interviews were

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recorded and transcribed. Identifiers sought after the interview process focused on determining trends that enabled the possibility of eliminating bias and/or stereotypes.

**Quantitative**. The quantitative data were collected from the survey responses. Data showed students' age, device preference, software preferences, virtual social environment preference, and social technology preference represented by pie charts, graphs, and bar charts using Legris et al. (2003) version of the Theory of Reasoned Action (TRA) and/or the Technology Acceptance Model (TAM) as a decoder. Legris et al. (2003) stated, "A key purpose of TAM is to provide a basis for tracing the impact of external variables on internal beliefs, attitudes, and intentions" (p. 193). "TRA and TAM propose that external variables intervene indirectly to influence attitude, subjective norms, or their relative weight in the case of TRA" (Legris et al., 2003, p. 193).

The Pearson product-moment correlation coefficient was conducted to assess the relationship between popular social media apps as rated by students and the frequency of their usage. Results returned determined the relationship students have using technology as an educational and social tool within and outside of school.

**Triangulation.** Triangulation was used as a test of validity and corroboration of evidence and data acquired from the questionnaires, observations, interviews, survey and a pilot group. Creswell and Plano Clark (2007) state that a triangulation design should be used when analyzing quantitative and qualitative findings. "The purpose of this design is 'to obtain different but complementary data on the same topic' (Morse, 1991, p. 122) to best understand the research problem" (as cited in Creswell & Plano Clark, 2007, p. 62). Another reason for triangulation as validation is the basis that this research will consider human behavior on the part of the students, and the assumptions of everyday dynamics/functions within the students' reality, as well as

collecting measurable and comparative data.

Creswell and Plano Clark (2007) explained that The Triangulation Design is a one-phase design used by researchers to implement quantitative and qualitative data in an effort to directly compare, contrast, validate, or expand on the qualitative findings in relation to the quantitative statistics (see Figure 3).  "Knowing some common experiences can be valuable for groups such as therapists, teachers, health personnel, and policymakers" (Creswell, 2013, p. 82).

During the investigation, the relationship between how teachers use technology and how students use technology, student usage and popularity of a social medium, and student interest in educational technology and willingness to learn with technology cannot be ignored.  Creswell (2013) stated, through investigation and observation, a deep understanding of behaviors by several individuals could be better understood; the longer we observe, and the more we investigate, the more we understand behaviors.  A technique recommended by Creswell and Plano Clark (2007) and Morse (1991) is triangulation (see Figure 3).

**Triangulation Design**
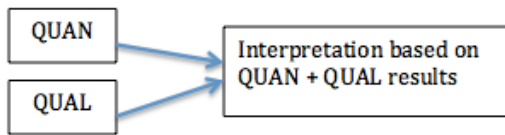


**Triangulation Design: Convergence Model**
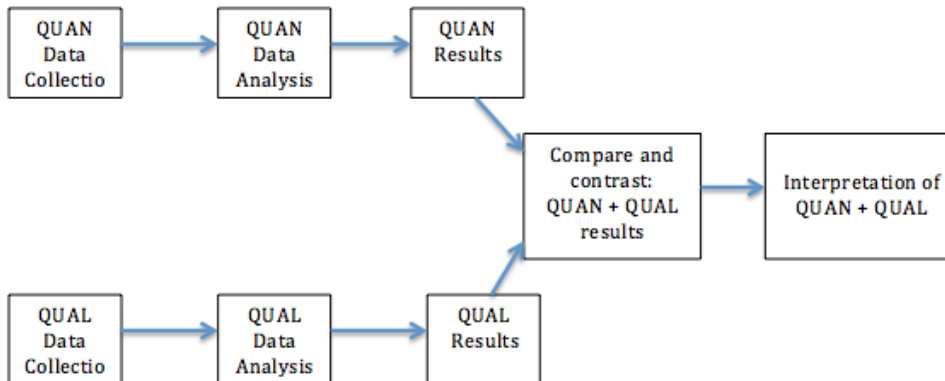


*Figure 3.* Triangulation Design and Triangulation Design: Convergence Model. (Creswell & Plano Clark, 2007, p. 62)

An important factor to note is triangulation may be used as a stand-alone mixed-method design, but for this survey design study, triangulation was only used as a test for validity. This study *did not* use a concurrent triangulation design and should not be categorized or considered as such. My reason for using triangulation as a validity test aligned with the thought process of, "when a single method is inadequate, triangulation is used to ensure that the most comprehensive approach is taken to solve a research problem" (Morse, 1991, p. 120). Morse (1991) identified the technique of using qualitative and quantitative methods to solve a research problem as methodological triangulation, further explaining that methodological triangulation can be classified as simultaneous triangulation and/or sequential triangulation. Considering Morse's (1991) methodological triangulation theory as a technique for validity, I also considered

simultaneous triangulation as a test for validity. Simultaneous triangulation is the use of qualitative and quantitative methods at the same time; sequential triangulation is used if the results of one method, the qualitative or the quantitative, are essential for planning the next method (Morse, 1991). This means, for sequential triangulation, the qualitative method is completed in full, and the results will be essential for completing the quantitative method, or visa versa. Using triangulation as a validity test allowed me to identify and validate connections between the questionnaires, observations, interviews, survey and a pilot group.

**Limitations of the Research Design**

The study was conducted on the school campus during class instructional periods, which eliminated the amount of time and attempts allotted to collect data from each class section. The aim was to survey each section once, observe each section once or twice, interview students from each section, and administer the initial survey to the sample group to better understand the results. Teachers were observed and asked to relate their recent experiences to the responses of the questionnaires and the survey taken by students.

Due to the social nature of 14 to 16 year olds, especially with social media, the studies were conducted as quickly as possible in a short time span as to restrict the sharing and influencing of responses. The approach was to randomize and shuffle the approach taken with each section when giving the survey, but not observing on the first visit and vice versa; or interviewing students first, then returning after an elapsed time period for the survey and vice versa. Creswell (2013) stated codes and categories should be sorted, compared, and contrasted until the analysis produces no new codes or categories. When all data are accounted for, then one can assume for the best results, as the best tests at a specific point in time may not have been the best choice when results are revisited in the future (Creswell, 2013).

**Validation**

     **Credibility.** Lincoln and Guba (1985) defined credibility as a form of trustworthiness, where confidence in the truth of the findings of the research, is important when evaluating the research study's worth.  Credibility is established through prolonged engagement, persistent observation, triangulation, peer debriefing, and other techniques (Lincoln & Guba, 1985). Participants of the study were unnamed and the research was confidential. Participants' responses cannot be identified or linked to an individual by the researcher. The survey forms were numbered post-survey; responses cannot be traced back to specific participants.

     **Dependability.**  Lincoln and Guba (1985) defined dependability as a form of trustworthiness, where showing that the research findings are consistent and could be repeated, is important when evaluating the research. Data were collected under the guidance of a strict protocol, and the teacher-student unspoken code of trust.  Participating teachers were requested to excuse students who they deemed undependable in contributing truthful responses or providing natural day-to-day behavior, as "the longer the researchers stay in the field or get to know the participants, the more they know what they know" (Creswell, 2013, p. 20).

     A technique for ensuring dependability is external audits.  External audits, as defined by Lincoln and Guba (1985), involves having a researcher not involved in the research process examine both the process and product of the research study.  The purpose of an external audit is to evaluate the accuracy, as well as, evaluate whether or not the findings, interpretations, and conclusions are supported by the data (Lincoln & Guba, 1985).

**Expected Findings**

     The expectations for this survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design, were to find an answer, reason, or logical

explanation to the following questions:

- Why do iGeneration students seem to display a "collective nature of attraction" toward virtual socialization?

- Why do iGeneration students seem to display a "shared resistance" toward educational tools/software?

As a researcher and educator, I sought to find an answer beyond the reason of "because learning is boring and social media is entertaining." I sought to bridge the approach and expectancies of students from teachers and teachers from students, and attempted to correlate a logical response from common terms and ideologies. The findings filled the gap to the uncompleted theories of prior researchers, such as Ilomäki (2008), Wallace (2004), Zhao and Frank (2003), Zhao et al. (1998) and Zhao et al. (2000), as well as confirming or disproving my own theories of why iGeneration students struggle to academically learn with technology; one main theory was due to the distractions of social media.

**Ethical Issues**

  **Conflict of interest assessment.** There is no conflict of interest with the assessment. I am a teacher at the institution, and I teach some of the students. The study was designed without bias toward teacher or student as the aim was to understand and communicate how each party may help the other achieve success within the classroom when incorporating educational technology inclusive/exclusive of social media elements.

  **Researcher's position.** Educators are willing to use and experiment with new technologies in learning environments (Picciano et al., 2010; Tarantino et al., 2013; Veletsianos, 2012). iGeneration students seem to be easily dismissive of teachers who attempt to use educational technology that lacks a social element (Veletsianos & Kimmons, 2016). Chewning

(2015) stated the increased prevalence of technology administrators, teachers, students, and parents are faced with challenges the determination of how to leverage technology associated with communication and social interaction when extending and attempting to enhance learning opportunities in the classroom.  Abbitt (2011) stated, "Self-efficacy is developed through social influences, vicarious, experiences, enactive mastery, and effectiveness (as cited in Chewning, 2015, p. 17).

**Ethical issues in the study.** Students willing to participate in the study may be affected by the notion that a technology teacher who is possibly their current, former, or future teacher, is conducting the survey and observations.  Those students randomly selected for interviews had a choice of abandoning the interview if they were not comfortable speaking to the teacher.  The study was completely confidential, students were not identified from their responses, and all steps to ensure student and participating teacher comfort in a state of normalcy was addressed and adhered.

**Chapter 3 Summary**

Niess (2010) stated, "In the case of digital technology integration, as understanding of technology increases, use will increase because it will be based on knowledge of pedagogy and content rather than technology use in isolation" (as cited in Chewning, 2015, p. 17).  There are concerning disadvantages for teachers attempting to utilize modern technology in the classroom, but the venture promises great rewards if the procedure is successful.  The disadvantage in question is the ocean of social media distractions at the fingertips of students.  I am in agreement with Chewning (2015) who stated the final domain of humanistic knowledge broadens the learning perspective to global and social context within/for students, as such learning supports life skills, job skills, leadership, cultural competence, and ethical and emotional awareness within

a knowledgeable domain between teacher and student.

Research questions were crafted to finding shared attributes between teachers and students when using education technology in the classroom. These questions were constructed to discover what teachers deemed important for learning tools and software versus what elements students deemed important within the same or future software. The focus was on methods and adapted strategies from Frank et al. (2011), Legris et al. (2003), Veletsianos and Kimmons (2016), and Wallace (2004) when determining the use of technology as a learning tool in the classroom with iGeneration students. I wanted to emphasize this focus in the research as I was primarily focusing on the "technology as a learning tool" aspect of their research, and not just technology as lone element.

Triangulation techniques were used as validity tests that allowed me to identify and validate connections between the questionnaires, observations, interviews, survey and a pilot group. Note, this study *did not* use a concurrent triangulation design and should not be categorized or considered as such. Triangulation techniques proposed by Creswell and Plano Clark (2007) in consideration to Minchiello et al. (1990) differentiation between qualitative and quantitative analysis of data aided in deciphering the behaviors behind mystery of shared resistance from students. Triangulation is a design used by researchers when attempting to align quantitative and qualitative findings (Creswell, 2013; Creswell et al., 2007). I used the triangulation design to validate my findings, not as mixed-methods design.

## Chapter 4: Data Analysis and Results

**Introduction**

This survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design, was designed to seek a better understanding of the complex relationship between teachers, iGeneration students, and educational technology by way of an investigative research. The study was guided by the primary research accomplished by Gikas and Grant (2013), Ilomäki (2008), Zhao and Frank (2003), Zhao et al. (1998), Zhao et al. (2000), and Wallace (2004). It is not known to what extent iGeneration students' use of social media detracts interests from learning with educational technology tools. The following research questions guided this research:

1. How do iGeneration students describe their use of social media software and technology?

2. How do iGeneration students describe their use of educational technology tools and software *within* a class/school environment?

3. How do iGeneration students describe their use of educational technology tools and software *outside* of class/school?

4. How do *teachers* of iGeneration students describe the students' use of educational technology tools and software in the classroom?

The study's timeline and onsite schedule was developed with site administrators in face-to-face meetings and the exchange of electronic mail. I briefly met with the director to request permission to conduct the study at the institution and received verbal confirmation. From that point onward, the superintendent reviewed requests related to the research. After meeting with the director, I had two meetings with the superintendent to discuss the purpose of the study and

how the study could proceed without significantly disrupting the routines of the institution, teachers, or students.  I met with the high school principal after the superintendent provided permission to conduct the study procedures at the research site.  The high school principal identified his own concerns, highlighted important dates teachers and students should not be interrupted, and the best times for interaction.  Emails were exchanged with the superintendent's office and the principal's office throughout the course of this study.

Initially, the superintendent suggested that conducting the research within English classes to ensure an individual student did not participate/contribute to the study on more than one occasion because all English classes for any grade level occur simultaneously.  This idea made setting a time for the distribution less complicated than expected.  The head of the English department was informed of the study and included in the logistics and planning stages for recruiting student participants.   The head of the English department obtained signed student assent forms and parent consent forms for participating in the study (see Appendix B and Appendix C).  Assent forms were used in addition to parent consent forms, because minors under the age of 16 cannot provide their consent to participate in a study.

A pilot group of 14 student participants was recruited to refine, develop, and frame survey questions, assess the degrees of bias, collect background information, and adapt research procedures (Creswell, 2013).  The pilot group completed assent forms and returned parent consent forms for the participating formally in the study and interview sessions.

Data were gathered from the pilot group using interviews and an informal survey that the pilot group could review and comment on during a focus group session.  This took place prior to recruitment of the survey sample from the general student body. The goal for the pilot group was

to assess the accessibility of the language and terminology used in survey, based on their iGeneration student's point of view.

After the pilot group returned their findings and the corrections assessed, a classroom visit and survey date was set. Sampson (2004) suggested pilot groups could be used to refine research instruments, such as questionnaires and interview schedules, as the instruments have greater use in ethnographic approaches to data collection in foreshadowing research problems and questions. Pilot groups are used to refine and develop research instruments, assess the degrees of bias, frame questions, collect background information, and adapt research procedures (Creswell, 2013). "Yin (2009) also recommends a pilot test to refine data collection plans and develop relevant lines of questions. These pilot cases are selected on the basis of convenience, access, and geographic proximity" (as cited in Creswell, 2013, p. 165). For clarity, it is important to note that, for this study, the pilot group activities were conducted in three phases and six sessions; Pilot Phase A (session one and two), Pilot Phase B (session three and four), and Pilot Phase C (session five and six). See Table 1 for a simple matrix of the research protocol. See Appendix F: Table 2 for a detailed version of the research protocol.

Table 1

*Simple Research Protocol Matrix*

| Chronology | | | Research Protocol | | |
|---|---|---|---|---|---|
| 1 | Pilot Phase A | ➔ | Teacher Interview: Phase I | ➔ | Observations and Survey Development |
| 2 | Pilot Phase B | ➔ | Survey Phase | ➔ | Initial Analyzation of Survey |
| 3 | Pilot Phase C | ➔ | Teacher Interview: Phase II | ➔ | Analyzation of Survey and Summary of Findings |

The rules for investigative studies are not specific when determining an appropriate sample size in qualitative research. Early investigative researchers Creswell (1998) and Morse (1994) recommend five to 25 participants or at least six participants respectively. Researchers recommended two to 10 participants be intensively researched when conducting investigative studies, and suggests a participation of less than 20 if an investigative problem is to be researched in depth (Crouch & McKenzie, 2006).  Patton (2014) suggested the study objectives should determine the qualitative sample size, as "the meaning, structure, and essence of the lived experience" should remain holistic (p. 115); while the researcher ensures the chosen participants are "'information rich and illuminative,' that is, they offer[ed] useful manifestations" (p. 46).

**Pilot Phase A.**  Fourteen students agreed to be a part of the pilot group. The pilot group completed assent forms and parent consent forms for the participating formally in the study and interview sessions. The pilot group participated in formulation of the initial survey, interview sessions, as well as an electronic assessment phase of the software Qualtrics, prior to the distribution of the survey. All 14 students completed and participated each pilot group

session.  The 14 pilot group participants were not a part of the main survey participants who contributed the 75 completed responses.  Considering pilot group study approaches by Gilman and Gabriel (2004) to aid in my understanding and analyzing of the bigger picture, and correlating a collective sense of the data, I think having had the pilot group focus on translating the findings from an unbiased point-of-view was a warranted approach. My reasoning was, I do not think like an iGeneration student nor did I know most of what I discovered during the six pilot group sessions.

The pilot group consisted of seven males (50%) and seven females (50%).  The age range of the pilot group was 14 years old for 11 of the 14 students, with one female and one male student recently celebrating their 15th birthday, and the youngest student celebrating his 14th birthday two months prior to the first session.

Demographics of the pilot group were unique, as none of the 14 students were practicing Muslims or Kuwait nationals.  English was not the mother tongue for any one of the pilot group students; six of the 14 students were fluent in English as a second language (42.9%); five of the 14 students were fluent in English as the second of three fluent languages (35.7%); three students were fluent in English as the third of four fluent languages (21.4%).  Analyzing student language capability was not an element previously considered, but the discussion arose during the pilot group session and I inquired further after being intrigued by the depth of the students' language background (see Table 3).

Table 3

*Participating Pilot Group Demographics*

| Student Primary Origin | Second Origin | Mother Tongue | Second Fluency | Third Fluency | Fourth Fluency |
|---|---|---|---|---|---|
| Middle Eastern | Middle Eastern | Arabic | English | French | N/A |
| Middle Eastern | North American | French | English | Arabic | N/A |
| North American | Middle Eastern | French | English | N/A | N/A |
| Middle Eastern | European | French | English | Arabic | N/A |
| Middle Eastern | N/A | Arabic | English | N/A | N/A |
| European | N/A | Hungarian | German | English | Romanian |
| Asian | Middle Eastern | Mandarin | Cantonese | English | Arabic |
| African | N/A | Arabic | English | French | N/A |
| Middle Eastern | N/A | Arabic | English | French | N/A |
| Middle Eastern | European | French | English | N/A | N/A |
| North American | N/A | French | English | N/A | N/A |
| North American | European | Spanish | English | French | N/A |
| European | European | Lithuanian | Russian | English | Polish |
| European | North American | Italian | English | N/A | N/A |

A total of six pilot group sessions were conducted. Session one focused on meeting and getting to know the students, explaining what would be happening over the next few sessions that we met, do's and don'ts of being in the pilot group, and maintaining the integrity of study. Session two focused on how the pilot group interacted with learning technology at school and outside of school, as well as social media at school and outside of school. In addition, I had approximately 30 draft questions designed from the literature review and research field notes that

I posed to the pilot group. The questions origin ranged from the years 1998 to 2013, and the

purpose of the exercise was to develop an updated version of questions posed by Gikas and

Grant (2013), Ilomäki (2008), Wallace (2004), Zhao and Frank (2003), Zhao et al. (1998), and

Zhao et al. (2000) with a modern perspective and iGeneration student lingo. I continued to

develop, edit, add, and remove survey questions during the teacher interview phase, the

observation phase, and determined a final draft after Pilot Phase B.

**Teacher Group Interviews: Phase I.** A total of 15 teachers across various departments

within the high school agreed to participate in the study. The teachers represented the

departments of mathematics, design and technology, chemistry, economics, French, English, and

individuals and societies (humanities, social sciences and history). A common instructional time

was identified for 8 of the 15 teachers willing to participate. Participating teachers completed a

teacher consent form (see Appendix E) and agreed to a possible informal observation, to observe

the technology usage of his or her classroom with G9 and/or G10 students (see Appendix A). Of

the 15 teachers who agreed to participate 12 completed the Phase I interview process (80%):

three mathematics instructors, two design and technology instructors, two chemistry instructors,

one economic instructor, one U.S. and World History instructor, one French instructor, and two

English Language instructors (see Table 4).

Table 4

*Participating Teachers Demographic*

| Course Taught | Teacher Gender | Teacher Age | Country of Origin |
|---|---|---|---|
| Chemistry | Female | 30 | Canada |
| | Male | 26 | Canada |
| Design & Technology | Male | 31 | Saudi Arabia |
| | Male | 56 | Turkey |
| Economics | Male | 32 | USA |
| English | Female | 28 | England |
| | Female | 34 | Canada |
| French | Female | 36 | Canada |
| | Female | 34 | Lebanon |
| Mathematics | Male | 28 | Canada |
| | Male | 26 | Australia |
| U.S. & World History | Male | 42 | USA |

The gender for participating teachers was seven males and five females. The representation by subject areas was mathematics–one female instructor and two male instructors, design and technology–two male instructors, chemistry–one female instructor and one male instructor, economics–one male instructor, U.S. and World History–one male instructor; French–one female instructor; and two female instructors of English. Faculty were international teachers originating from Australia, Canada, England, Lebanon, Saudi Arabia, Turkey, and USA. The youngest and eldest male teachers were 26 and 56 years old, respectively; youngest and eldest female teachers were 28 and 36 years old, respectively.

During the participating teachers' pre-survey interviews, teachers were asked a series of predictive questions (see Appendix H). The questions were designed to place the teacher in the shoes of his/her students. All 12 teachers admitted to occasionally losing iGeneration students during instruction, while using technology, minimum of 15% each 50-minute class period. The term 'losing' was used by the teachers when referring to student learning, student behavior, or student participation being off course/target for the day's planned lesson/objectives/activities. Almost eight minutes of each class period a teacher decides to use technology, that teacher spends a minimum of eight minutes curbing focus toward the medium used. Teachers were asked to reflect on 10 consecutive class sessions where educational technology was utilized, and how many of those sessions would they consider the use of the educational technology a failure when engaging iGeneration students. Responses showed five of the 12 teachers determined they lost student engagement with the/a medium on at least two of each 10 attempts; four of the 12 teachers determined students were lost on three of each 10 attempts; two of the 12 teachers replied "half-and-half" as each attempt was a "gamble" with uncertainties of student engagement being positive or negative; and 1 teacher completely gave up on using technology as the experiences were never rewarding.

Teachers were asked to identify their preferred choice of educational technology. All three math teachers utilized special calculators designed specifically for their math courses, and emphasized the brand of the calculator did not matter, such as the preferred Texas Instruments model in the North American region, but various functionalities were important. The calculators had to have the capability to share data with the teacher's and students' computers, as well as project results to the overhead; draw graphs and perform differential equations; and various other course/content specific functions. Although devices were limited in regards to presentation and

lesson creativity, the productivity potential was immeasurable.  When asked why a specific model calculator was not selected for the math courses, two examples of common responses were: "students have the freedom of choosing and purchasing calculators that could be used in math as well as other disciplines, such as chemistry or physics, thus saving money if two or more devices had to be purchased versus one" and "we care more about the functionality than the brand."

Design teachers humored the question as the course is naturally technologically based, but both teachers highlighted they have experienced less technological innovativeness and curiosity from their students in recent years.  Each year fewer students want to build and innovate. The current trend is to make short videos, many video related assignments have been removed from the project list in an effort to expose iGeneration students to other options.  The science teachers were the most dynamic, utilizing equipment in digital and analog form; iPads used as measuring tools, tutorial aids, and experiment guides, while Bunsen burners sizzled chemicals and trial tests, resulting in student participants responding that 95.92% of the science classes were engaging through use of technology.  History, economics and French teachers utilized the generic digital projector technique with the occasional video, with all five teachers giving various statements that lead me to believe when another approach was attempted, the lessons did not go well as compared to sticking with the tried and tested digital projector. All teachers were asked to rank the level of pressure felt professionally to utilize technology in the classroom on a Likert scale of one to five; one representing little to no pressure, and five representing immense pressure.  Two of 12 teachers stated a midway response with a three out of five, citing a need to make use of the resources within the classroom. An interesting response from seven of the 12 teachers stated the lowest point of one out of five, citing "the technology

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presents itself regardless." The remaining three of 12 teachers stated four out of five, citing students' request digital elements whenever "the papers" are too much.

Responses from the participating teachers were analyzed and revisited during "Phase II" of the teacher group interviews (see section Teacher Group Interviews: Phase II). Phase II of the teacher group interviews occurred post-survey and post the final session with the pilot focus group.

Prior to the survey launch date, I discovered the survey could be sent to the students' school emails and accessed from their mobile phones and other compatible devices through the distribution features of the Qualtrics software. With the discovery, a decision was agreed upon to have all participating students utilize a secured computer lab, where the school's computer could be used to access the survey or on the student's mobile device, in an effort to minimize the disruption of instructional classes as much as possible.

**Pilot Phase B.** I returned to the pilot group for a third session and created a mock survey for investigative purposes. Session three of the pilot phase informally evaluated the draft version of the primary survey. The pilot group did not *see* the survey questions, but they knew what the questions were, as discussions were based on the study to be conducted. A version of the mock study was examined with the pilot group for two consecutive days. An important discovery was once the survey was opened on a device, that device could not access the survey on another occasion. The pilot group also aided in discovering that once the survey was opened, the survey closed after 8 to 10 minutes with no interaction from the responder. The mock survey was assessed on Apple and Android devices, as well as less popular tablet platforms running versions of Linux, because the pilot group participants had tablets running the platform due to cost and availability.

During the fourth pilot group session, the participants and I evaluated the end product to be designed in Qualtrics, and to determine how best to launch the electronic distribution method of the study. Questions were also assessed to ensure participants understood the language and context of each question. Once this process was completed and the questionnaire was finalized, I revisited the classrooms of participating teachers and coordinated times the surveys would be sent, as well as reminded students of the location for participating and emphasized the time restraints for the electronic link to the survey.  Information gathered was used to amend the final draft of the survey, which was distributed to participating students (see Appendix D and observation of classrooms section). The final version of the survey consisted of 39 questions broken into two sections; section one focused on social media technology within the classroom and outside the classroom, and section two focused on educational technology within the classroom and outside the classroom.

**Observations of classrooms.**  The study consisted of observations of grade 9 (G9) and grade 10 (G10) classes of the participating teachers. Participating teachers completed a teacher consent form (see Appendix E) and agreed to a possible informal technology usage observation of his or her classroom with G9 and/or G10 students (see Appendix A).  Participating teachers coordinated times that informal observation(s) could be conducted in his/her classroom. The purpose of the observations was to see what technologies other discipline teachers were using with iGeneration students. The participating teachers coordinated times that the participating students would be released to take the survey. Participating teachers reminded students of the location for participating and emphasized the time restraints of the electronic link attached to the survey, as student participants could only access the survey once and the link closed after eight minutes of inactivity.

**Survey phase.** A combined total of 254 students in grade 9 (G9) and grade 10 (G10) were informed about the study face-to-face in their English classes. Students willing to participate were handed a pair of assent and consent forms for their parents to be signed and returned by a specific date, inclusive of meeting dates for parents seeking additional clarification about the study. Approximately 23 parents met face-to-face, 40 engaged in telephone conversations, and a single parent emailed. After students were informed in a group fashion, some English teachers decided to withdraw their participation from the study. A common reasoning was the notion that they felt the study was going in a technological direction and deemed their own use of technology in the classroom was below par. Some teachers simply did not want to participate. I respected their concerns and withdrew their participation. The solution for this setback was to inquire which teachers were willing to participate, then identifying a single yet common teaching period on a specific day to eliminate the possibility of duplicate participants and responses.

During the survey phase of the research, the study site enrolled 133 students in grade 9 (G9) and 121 students in grade 10 (G10), for a target population of 254 students for the study. Students from these grades were targeted to participate in this survey study because they met the iGeneration age requirement at the time of the study, 14 to 16 years old. Of the 254 target students, 132 students agreed to participate in the study, 98 students returned their parent-signed consent forms, 83 students started the survey, and 75 students completed the survey. Only the 75 completed surveys were used for data analysis; the incomplete surveys were not used. The age range of the primary survey participants was 44% 14 year olds, 31% 15 year olds, and 24% 16 year olds (see Table 5).

Table 5

*Age at Time of Taking the Survey*

| Age | *n* | % |
| --- | --- | --- |
| 14-years old | 33 | 44.44 |
| 15-years old | 23 | 31.11 |
| 16-years old | 18 | 24.44 |

The link to the survey was distributed by email to the students' institution email address, for students who had returned assent and consent forms signed by a parent or guardian. Participants could only access the survey once and the link closed after eight minutes of inactivity. The student survey had two sections, a social media technology section and an education technology section, with a total of 39 questions (see Appendix D).

A drawback, in regards to the primary survey participants, was students were asked their age, but not their gender. Though this was a setback to the demographics and the statistics, survey participant's gender was not recorded due to cultural reasons, as parents did not know what questions would be asked, so their request to protect female participants was granted. The parents of the pilot group participants granted permission for gender to be a demographic.

The demographics of the school population consisted of Muslim students from Europe, the Middle East, North Africa, South-East Asia, and North and Central America, with non-Muslim students contributing to approximately 5% of the school's almost 2000 student population across all sections of elementary, middle, and high school from the above mentioned regions. I decided not to include a regional demographic question of the students as I learned during a pilot group session a number of the students hold passports from other first world

countries. The demographic question would have caused students to lie on the survey because I am considered a foreigner.

Participants could only access the survey once and the link closed after eight minutes of inactivity. Some students arrived early to the physical survey location. Several students reported having low batteries on their mobile phones and were assigned one of the school's desktop computers from which to complete the survey. As predicted by the pilot group, the participating students had various tablet types, but each participant using a tablet was able to access and take the survey.

The survey was distributed electronically to all 98 students who had returned signed assent and consent forms using Qualtrics, and I waited for the participants to complete the survey and for the results. While waiting, I asked students who left early if they checked social media while taking the survey, in anticipation the data would not be collected in full as this was my first time using Qualtrics. The first student to leave the room did so four minutes after the survey had started. The last two students to leave the room spent 32 and 34 minutes, respectively, on the survey. On average, students who completed the survey sporadically left the room between the 12-minute to 15-minute markers. At the 22-minute marker, nine students all got up at once, but observation revealed that eight students were waiting on another to complete the survey so they could leave as a group. I had not accounted for or anticipated a factor of friendship while timing the participants, and immediately reflected on the students who left earlier, and most students left the room with at least one friend.

**Preliminary analysis of survey results: qualitative (open ended questions) and**

**quantitative analysis (descriptive statistics).**  The survey consisted to two sections,

social media technology (section one) and educational technology (section two); the halfway

point of the study was the end of section one, the social media technology section (see Appendix

D).  Analyzation of the social media findings, of the student responses, illustrated that 65% of

the 75 students who completed the survey said they had not checked social media once upon

arriving at the halfway point of the survey (see Table 6 and Appendix G: Figure 4).

Table 6

*Social Media Usage Data, at the Halfway Point, While Taking the Survey*

| Item and Response | *n* | % |
|---|---|---|
| While Taking the first half of the Survey, how many times have you checked social media? | | |
| More than twelve (12) times | 0 | 0.0% |
| At least eight (8) to twelve (12) times | 4 | 8.2% |
| At least five (5) to seven (7) times | 1 | 2.0% |
| Maybe three (3) to four (4) times | 2 | 4.1% |
| Once, maybe twice | 10 | 20.4% |
| No time at all | 32 | 65.3% |

A similar question was asked at the end of the survey, on completion of the education

technology section, and the responses were similar to that of the social media technology section.

The final question of the survey asked how many times was social media checked while taking

the survey?  An accumulated tally of 11.64% said they checked social media more than 8 times

by the end of the survey, 18.60% said they checked at least once, and 55.81% maintained that

social media was not checked at all.  Considering the students who left between the 12 to 15

minute marker, these students may have been the 55.81% that remained focus during the survey,

with the assumption that the 11.64% students who checked social media more than 8 times

within a 15 minute timeframe were the students who took a longer time to complete the survey.

Of the respondents, 4.66% said they checked social media more than 12 times within the

maximum 34 minutes of the survey, with 2.33% stating 15 times or more (see Table 7 and

Appendix G: Figure 5).

Table 7

*Social Media Usage Data for the Duration of the Survey*

| Item and Response | *n* | % |
|---|---|---|
| While taking the second half of the survey, how many times have | | |
| you checked social media? | | |
| At least fifteen (15) times or more | 1 | 2.3% |
| More than twelve (12) to fifteen (15) times | 1 | 2.3% |
| At least eight (8) to eleven (11) times | 3 | 7% |
| At least five (5) to seven (7) times | 0 | 0.0% |
| Maybe three (3) to four (4) times | 6 | 14% |
| Once, maybe twice | 8 | 18.6% |
| No time at all | 24 | 55.8% |

The data showed that the longer the survey went on, the more likely students gravitated towards

social media.  At the end of the survey, 44.19% of the students gravitated towards social media at

least once, an increase from 34.69% at the halfway point of the survey.   The last participant left

the room within 34 minutes.  The data illustrated, that within a 15-minute timeframe, 34% to

44% of the students could not control their curiosity of what is occurring on social media and were consistently distracted simply from curiosity.  The occurrence of gravitation toward social media indicates a limitation with the study, on the basis that, if the students were not being monitored and timed then the behavior would not have been observed and recorded.

   ***Summary of the social media technology findings.*** A survey question asked participants to rank their own addictiveness towards social media using the Likert scale.  Results suggest that the average student (60%) is able to go two hours without checking social media, but only 5.45% said social media does not interest them.  However, 40% stated they could not go an hour without checking a single form of social media, with a further 14.55% stating they check social at least three times every five minutes, an alarming statistic for a G9 and/or G10 teacher (see Table 7 above).  Taking the students addictiveness for social media into context, the possibility exists all students are capable of enduring a class period less than an hour in length without giving in to the curiosity of social media.  But as an educator of high school students, I admit a student with an urge for checking social media three times every five minutes, or 36 times with a single 45 to 55 minute class period, will lead to a lot of distractions for students seated in proximity of the addicted student.

   The first cluster of questions on the survey sought to identify and rank students' preference for social media from greatest to least favorite, most commonly used to the least commonly used medium, and investigate the reasons behind their selections.  Using a Likert scale to determine students' favorite social medium/media, results showed WhatsApp was a favorite with 70.31% of the responders deeming the application their absolute favorite social medium with SnapChat, YouTube, and Instagram returning 50% for second favorite.  The participants also had the option of including up to four other social mediums they deemed among

their favorites, which returned a 40% range of responses identifying Musical.ly and Phhhoto as the next favored social applications.  On the opposite end of the Likert scale, the iGeneration students identified Facebook (57.81%), Tumblr (46.77%), Vines (41.94%), and Twitter (21.88%) as the top four disliked social mediums (see Table 8 and Appendix G: Figure 6).  The fore mentioned results are discussed and analyzed further in the Pilot Phase C.

Table 8

*Favorite Social Medium versus Disliked Social Medium*

| | I DO NOT like this medium at all<br><br>*n*(%) | I like this medium, but not a lot<br><br>*n*(%) | I like this medium, but I like others a lot more<br>*n*(%) | I like this a lot, but it's not my favorite<br><br>*n*(%) | My absolute favorite medium<br><br>*n*(%) |
|---|---|---|---|---|---|
| Facebook | 37(57.8%) | 10(15.6%) | 8(12.5%) | 7(10.9%) | 2(3.1%) |
| Instagram | 2(3.1%) | 5(7.7%) | 9(13.8%) | 34(52.3%) | 15(23.1%) |
| Snapchat | 3(4.7%) | 2(3.1%) | 6(9.4%) | 21(32.8%) | 32(50.0%) |
| Tumblr | 29(46.8%) | 12(19.4%) | 7(11.3%) | 7(11.3%) | 7(11.3%) |
| Twitter | 14(21.9%) | 16(25.0%) | 11(17.2%) | 16(25.0%) | 7(10.9%) |
| Vines | 26(41.9%) | 16(25.8%) | 9(14.5%) | 8(12.9%) | 3(4.8%) |
| Whatsapp | 0(0%) | 1(1.6%) | 3(4.7%) | 15(23.4%) | 45(70.3%) |
| Youtube | 1(1.6%) | 1(1.6%) | 5(7.9%) | 20(31.7%) | 36(57.1%) |

A stand out statistic was 84.91% of the survey responders identified their mobiles as the primary sources of accessing social media, 0.00% identified the smart watch as a source, yet students wear smart watches (see Appendix G: Figure 7).  Note, 72.84% of the participants stated or

related to the phrase "My phone is always on me", as the reason for utilizing mobiles to access social media.  Figure 7 was discussed further in Pilot Phase C with the pilot group.

Peer pressure (the influence from/of others) was another element highlighted within the survey.  Participants were asked if they have ever felt peer pressured to use social media technology.  Almost 39% of respondents stated their friends did not care about the personal virtual actions performed online.  Almost 56% admitted to being peer pressured to using social media, with 26.92% of the majority acknowledging peer pressure occurred mostly when something is trending; 23.08% stating they feel pressured at least once per week to be involved virtually; and 5.77% highlighted a constant feel of peer pressure (see Appendix G: Figure 8).

The study also reversed the questioning in an effort to identify if students peer pressured in using social media in turn peer pressured others.  A similar 5.77% fraction of participants admitted to peer pressuring others to get involved, which lead me to believe this small pocket of respondents were the social media addicts; 25.00% admitted they applied peer pressure whenever something was trending; and a combined 42.31% stated their friends did not care about their personal virtual actions performed online (see Table 9 and Appendix G: Figure 9).

Table 9

*Social Media Peer Pressure*

| Item and Response | *n* | % |
|---|---|---|
| Do you pressure your friends to use social media? | | |
| Yes, absolutely, all the time. | 3 | 5.8 |
| Yes, sometimes, but not often. | 5 | 9.6 |
| Yes, but only when something is trending. | 13 | 25.0 |
| No, my friends don't care what I do virtually. | 22 | 42.3 |
| No, I'm not a fan of social media. | 9 | 17.3 |

There was an interesting twist in the data when asked how important receiving likes or views as the "my friends don't care" response dropped to 11.54%; 32.69% responded they were neutral or 50-50 in regards to receiving "views" or "likes"; 32.69% acknowledged there was yearning for the "views" or "likes" but they would survive; and 13.56% responded "views" or "likes" were absolutely important if they posted or commented virtually (see Table 10).

Table 10

*Importance of Receiving "likes" or "views"*

| Item and Response | *n* | % |
|---|---|---|
| Is it important that you received "likes" or "views" when you post or comment online? | | |
| Yes, absolutely, all the time. | 7 | 13.5 |
| Yes, sometimes, but it's not that important. | 17 | 32.7 |
| Neutral. I'm 50/50. | 17 | 32.7 |
| No, my friends don't care what I do virtually. | 6 | 11.5 |
| No, I'm not a fan of social media. | 5 | 9.6 |

Analyzing the results further, I realized the social circle of the participants was not queried. The results did not highlight if any of the respondents were an extravert or an introvert, and therefore the data and study had some limitations. Respondents stated their friends did not care what they were doing online, but, there was a feeling of neglect if friends did not interact with the respondent's virtual contribution.

***Summary of educational technology findings.*** The second half of the survey focused on educational technology questions. Educational Technology is a learning tool used by teachers to enhance learning; participants were asked to relate their classroom experience with learning tools. If respondents did not take a particular course or subject, they were instructed to select "not sure (N/A)". The data showed that all courses, with the exception of Arabic Studies, utilized the use of technology. An important factor to highlight is, none of the pilot group participants had taken Arabic Studies. Students, who took Arabic Studies, upon completing the survey clarified the course was divided into two parts: Arabic Learning (Writing and Reading) and Religion (Islamic Studies). The Islamic Studies section of the course refrains from the usage

of technology (see Table 11) to adhere to religious beliefs, but a digital projector was sparingly

used when illustrating specific content.

Table 11

*Educational Technology in Course Subjects*

| Item and Response | Yes n(%) | No n(%) | Not Sure (N/A) n(%) |
|---|---|---|---|
| Have you experience educational technology in any of the following course subjects: | | | |
| English Literature | 44(88%) | 4(8%) | 2(4%) |
| Language Arts | 26(52%) | 8(16%) | 16(32%) |
| Humanities | 46(93.9%) | 1(2%) | 2(4.1%) |
| Theater Arts/Drama | 26(54.2%) | 6(12.5%) | 16(33.3%) |
| Band/Musical Arts | 20(41.7%) | 12(25%) | 16(33.3%) |
| Vocal Arts | 15(31.3%) | 11(22.9%) | 22(45.8%) |
| Visual Arts | 22(46.8%) | 6(12.8%) | 19(40.4%) |
| Technology/Design | 49(100%) | 0(0%) | 0(0%) |
| Arabic | 15(31.3%) | 25(52.1%) | 8(16.7%) |
| Arabic for Foreign Learners (AFL) | 9(19.6%) | 12(26.1%) | 25(54.3%) |
| French/Spanish/Other Foreign Language | 22(46.8%) | 6(12.8%) | 19(40.4%) |
| PE | 38(79.2%) | 4(8.3%) | 6(12.5%) |
| Science | 47(95.9%) | 1(2%) | 1(2%) |
| Math | 28(57.1%) | 11(22.4%) | 10(20.4%) |
| Math Extended | 26(59.1%) | 6(13.6%) | 12(27.3%) |

Participants were provided a series of scenarios with follow-up questions. The first

scenario, "When a teacher tries to use technology to enhance a lesson, are you more engaged or

distracted? Why?" returned the following verbatim responses:

Students' with engaged responses:

- "There are a lot of good sources that encourage me as a student to look deeper into something. It also depends on the subject."

- "I feel using technology is better than paper because my handwriting isn't the best."

- "Because technology provides a real life application of the lesson being taught."

- "Because I become more organized as I find it more relaxing to be organized which gets be engaged into the subject."

- "Once I am accustomed to a certain method a teacher uses to teach, it's easy for my mind to wander. Since I'm already a fan of technology, incorporating it into my lessons is not only new but also helps me focus more."

- "It's usually something new, different from the way the teacher usually teaches. Most of the times its interesting since teachers try their best to keep the students engaged."

Students' with distracted responses:

- "I want to do other things on my device."

- "I can use this technology to go on social media or other cites that will distract me from what the teacher is saying or what he/she wants me to do."

- "Its easy for me to access video games without the teacher finding out."

- "Paper can be easier to our health, screens are bad!"

- "You get a notification aaaaand zone out... class is done for me after that."

- "I understand something better when a teacher explains in person."

- "Protector turns on and its bedtime for me."

Students' responses with uncertainty:

- "It depends on how the teacher is using it."

- "It honestly depends on how the teacher tries to enhance it using technology. If its in a way that interests me then I'll be engaged but if its in a way that makes me wanna play games from boredom then I'll be distracted. Overall, as long as I'm interested, I'm engaged."
- "It helps with the lesson but distracts a lot of people. I'm unsure because I like it at times and hate it sometimes and it depends on the teacher."
- "Some teachers use technology for really boring things and we might as well do it on paper."
- "It really depends on the type of technology that the teacher is using and in what context they are using it for different types of topics and subjects."
- "I know teachers try hard but if the teacher is using the technology in a boring way I am going to sleep."

The respondents gravitated towards being more engaged with a 48.94% response rate as compared to 19.15% feeling disengaged. An important note was 31.91% remained uncertain if technology in the classroom was a good or bad element when attempting to enhance learning. A common theme among the participants was that engagement depended on the teacher (see Table 12).

Table 12

*Educational Technology: Engaged versus Disengaged versus Uncertainty*

| Item and Response | $n$ | % |
|---|---|---|
| When a teacher tries to use technology to enhance a lesson, are you more engaged or distracted? | | |
| More engaged. | 23 | 48.9 |
| Distracted. | 9 | 19.1 |
| I'm not sure. | 15 | 31.9 |

The scenario "A teacher takes everyone's cell phone at the start of class. During the lesson, the teacher wants you to be interactive with learning technology, so the phones are returned for an activity. Will you..." followed by choice responses: Follow the activity without getting distracted? Try to follow along but social media distracts you?, Immediately check social media but come back to the lesson?, or Lose focus completely and forget about the lesson? (see Table 13).

Table 13

*Cell Phone Scenario*

| Item and Response | *n* | % |
|---|---|---|
| Imagine this scenario: A teacher takes everyone's cell phone at the start of class. During the lesson, the teacher wants you to be interactive with learning technology, so the phones are returned for an activity. Will you... | | |
| Follow along with the activity on your phone without getting distracted? | 16 | 34.0 |
| Try to follow along but social media occasionally distracts you? | 19 | 40.4 |
| Immediately check get distracted on social media but then you focus on the activity afterwards? | 9 | 19.1 |
| Lose focus completely and forget about the activity? | 3 | 6.4 |

Analyzing the responses revealed, 65.96% of respondents said they would check social media during the lesson if the cellphone were returned to them. In a class of 20 students, 34% is only seven students remain engaged. Data showed giving the phones back would not be a good idea/activity on the part of the teacher.

The student participants were then asked to rank their teachers' technology engaging methods while using technology in the classroom against their boredom levels. Collectively, more than 80% responded they felt bored when teachers use technology in the classroom with

40.43% stating being bored occurred frequently.  Only 12.77% of the student respondents said

teachers' keep them engaged.

The final scenario depicted a teacher who wants to use more technology with a social

element in the classroom (ex: YouTube), but each time he/she tries to, students lose focus on the

advertisements or request other videos not related to the lesson. The teacher then stops using

technology all together for weeks. The participants were required to choose one of three actions

that they thought was the role they would play in the scenario.  Of the respondents, 51% said

they would plead with the classmates ruining the experience, while 40% said they would rather

the class continues without any educational technology involved. However, when asked if

technology should be used more frequently in the classroom 76% said yes, as 65% said they like

having technology in the classroom, but the previous statistic of an 80% boredom rate cannot go

ignored (see Table 14 and Table 15).

Table 14

*Teacher Wants to Use More Technology with a Social Element*

| Item and Response | *N* | % |
|---|---|---|
| Imagine this scenario: A teacher wants to use more technology with a social element in the classroom (ex: YouTube) but each time he/she tries to, students lose focus on the advertisements or request other videos not related to the lesson. The teacher then stops using technology all together. Would you... | | |
| Rather have class without the technological enhancements if it keeps the students around you focused? | 19 | 40.4 |
| Plead with your classmates to allow the teacher to use technology without ruining the experience? | 24 | 51.1 |
| Be completely oblivious that you are the student being the distraction? | 4 | 8.5 |

Table 15

*Is Technology Boring in the Classroom*

| Item and Response | *n* | % |
|---|---|---|
| As a whole, do you think the way teachers use technology in the classroom is boring? | | |
| Yes, it's always boring | 1 | 2.1 |
| Yes, most of the time it's boring | 19 | 40.7 |
| No, it's only boring sometimes but not often | 21 | 44.7 |
| No, it's never boring | 6 | 12.8 |

*\* Only 63% of the survey participants answered this scenario.*

The data and the students appeared to be stating they want educational technology in the classroom, but the methods of usage bored them. Students acknowledged teachers do try their best to use educational technology for a more engaging classroom, but also acknowledge teachers' best efforts may not be enough to keep them from social media or feeling bored in class.

Three other scenarios were presented to the survey participants; the pilot group assisted me in understanding and categorizing majority of the written responses. The three scenarios asked participants to, one, consider the current use of technology in the classroom (see Table 15 above), two, justify if teachers should use more or less technology in the classroom (see Table 16), and three, reflect on his/her liking or dislike of technological advancements in the classroom (see Table 17).

Table 16

*Should Teachers Use Technology More or Less*

| Item and Response | *n* | % |
|---|---|---|
| Should teachers use technology less or more? | | |
| Less. | 11 | 23.9 |
| More. | 35 | 76.1 |

*\* Only 61% of the survey participants answered this scenario.*

Table 17

*Do You Like Technological Advancements in the Classroom*

| Item and Response | *n* | % |
|---|---|---|
| Do you like having technological advancements in the classroom? | | |
| No, not at all | 1 | 2.1 |
| I'm not sure | 15 | 31.9 |
| Yes, I do | 31 | 66.0 |

*\* Only 63% of the survey participants answered this scenario.*

Refer to the Pilot Phase C section below for the pilot group's iGeneration perspective and analyzation of Table 15, Table 16 and Table 17.

**Pilot Phase C.** After the primary survey concluded, a post-survey interview was conducted with the pilot group to clarify some of the findings, such as slang terms used by some of the survey respondents. The questioning method of the post-survey interview followed the primary survey, with focus on the open-ended responses, and a second focus on the choice responses that returned close percentage result responses. Session five and six with the pilot group focused on deciphering terminologies used within the survey by the participating students,

addressing and discussing behaviors observed during the taking of the survey, and conducting

informal post-survey interviews with the pilot group participants. The responses from the

interviews were transcribed verbatim in the event a response was misunderstood or

misinterpreted.

During the sixth pilot group session, the pilot group discussed that the Vine medium was

still accessible, but there was and would be no more new content. Upon querying why this

medium was not removed from the list during a previous session, eight of the 14 pilot group

participants referred to themselves as "Vine Faithful's" and confirmed they still used the medium

to follow/watch their favorite "vloggers" who had not completely moved to YouTube, Instagram,

or another medium at that point in time. For clarification, a vlogger is an individual who blogs

via video; the context of this terminology and the responses of the participants confirmed why

YouTube, SnapChat, and Instagram are combative secondary favorites for the students. When

asked about the other disliked mediums, the pilot group referred to Facebook and Twitter as

mediums for "old people." The survey results had 23 of the 75 responders specifically identify

Facebook and Twitter as a tool for users over 30 years old. I queried why was the age of 30

considered "old"; one pilot group participant responded, "I am 14 years old, if you double my

age that's 28, so logically 30 is old." Another student added, "My parents had me at 26 or 28. If

you're older than 28 then you're *old*! Emphasis on the *old!*" (see Appendix F: Table 19,

Appendix F: Table 20, Table 20 and Appendix G: Figure 6).

Pearson product-moment correlation coefficient was conducted on Q1 and Q4, see

Appendix D, to assess the relationship between popular social media apps rated by students and

the frequency of their usage. To evaluate popular social media apps as rated by students and the

usage of social media apps Q1 and Q4 were selected from the survey (see Appendix D). Each

question, Q1 and Q4, contained 12 individual options that best depicted popular social media apps that best represented the usage of these apps; re-used as a comparison in Q4. A reliability analysis indicated that there was some interrelatedness among the twelve individual items for popular social media apps (.83) and the usage of these apps (.86). Students' ratings of each of the 24 items are presented (see Appendix F: Table 19 and Appendix F: Table 20). Scores on each statement ranged from 1 to 5. Scores that fell between 1 and 2 indicated the least popular or rarely used apps, while scores above 3 indicated more popular and frequently used apps.

Highlighting the responses in regards to the popularity of using mobile phones to access social media (see Appendix G: Figure 7), the pilot group had an off-topic but meaningful conversation about smart watches in general and the direction smart watch technology was presently headed. Within the pilot group, three of the 14 students (21.42%) were wearing a smart watch; two of the 14 (14.28%) said they owned a smart watch, but the device was worn only on formal occasions; five of the 14 (35.71%) said they did not own a watch of any kind; the remaining four (28.57%) said they owned normal watches, but the devices were sporadically worn. Further inquiry revealed two of the 14 students (14.28%) said they were not interested in a smart watch at the time. One student stated he was waiting for the release of the most updated version of the Huawei smart watch, which contains features such as a microphone and camera. He found this interesting because Apple does not have a microphone feature in the current models, and he heard a rumor Huawei was desperately trying to have a camera on the upcoming model. I then observed the two students who said they had no interest in smart watches sleekly take out their iPhones and Google searched the Huawei Smart Watch. Because the session was going so well, I did not stop to ask these two students why the sudden interest in this specific device. The action then lead me to believe the two students were genuinely not interested in

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smart watches because of the microphone and camera limitation, and I realized if the information was correct, teachers had another area of frustration with which to deal.

Survey participants were provided a series of scenarios with follow-up questions; I required an iGeneration student's help in deciphering three of the scenarios, and sort clarity from the pilot group. The first scenario, "When a teacher tries to use technology to enhance a lesson, are you more engaged or distracted? Why?" (survey responses reflected in Table 14 from the *summary of educational technology findings* section). The second scenario, "Considering your own experience with the current use of technology in the classroom, rank your experience on the given scale" (survey responses reflected in Table 15 and Table 16 from the *summary of educational technology findings* section). The third scenario, "Considering the availability of educational technology you have access to at school, do you like having technological advancements in the classroom?" (survey responses reflected in Table 17 from the *summary of educational technology findings* section). It is important to note that 0.00% of the survey participants answered all the scenarios they were presented with. Considering the divide of the verbatim responses is it important to note that the pilot group was also divided across all the scenarios. On reflection, each member of the pilot group realized that some of their responses contradicted his/her opening statement; this notion then led me to believe the survey participants may have realized the same contradiction and opted to omit some of their responses.

At the end of the discussion, 8 of the 14 pilot group participants' (57.14%) final answer was teachers *should not* try utilizing technology in the classroom beyond the basic projector uses; however, over 76% the survey participants stated teachers should use more technology in the classroom. More than 80% of the pilot group and the survey participants agreed that teachers' use of technology was boring, highlighting the repetitive exercises teacher utilize once

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a projector is turned on.  The pilot group was in contrast with the survey participants, as 76% of

the survey participants urged teachers to continue using technology while 57% of the pilot group

called for a halt is usage, with the exception of a projector.  Overall, both the pilot group and the

survey participants returned a response of 65% or more admitting to *liking* the use of

technological advancement in the classroom.

**Teacher group interviews: Phase II.**  The teacher interviews occurred at random

intervals during scheduled prep periods, lunch breaks in an unoccupied classroom, and/or an

empty teacher's lounge. Participating teachers were interviewed before (see Appendix H) and

after (see Appendix I) data of the study were collected and analyzed; 12 teachers across various

departments participated in the study; two teachers were math instructors, two teachers were

design and technology instructors, two teachers of chemistry, one teacher of economics, one

teacher of U.S. and world history, two French teachers, and two English language teachers (see

Table 4 above).

Of the participating teachers all 12 teachers were interviewed pre-survey and post-survey;

all 12 teachers completed the pre-survey interview; all 12 teachers started the post-survey

interviews, 8 of the aforementioned 12 teachers completed the post-survey interview due to time

limitations.  The purpose of the post-survey interview was to gain teacher perspectives on the

analyzed survey results. It is important to note that of the 12 teachers participating in the pre-

survey interviews, 8 participated in one-on-one post-survey interviews, with two teachers

interviewed as separate pairs.  Of the 12 participating teachers, four teachers were interviewed as

two separate pairs at separate times; three teachers were interviewed as a group in the teacher's

lounge; and the remaining five teachers were interviewed individually. The questioning method

for the teachers focused primarily on the teacher/teaching related questions and results from the

primary survey (see Appendix D) with a secondary focus to follow up on the teachers' own responses and reflection to the students' responses.

The teachers were asked, theoretically speaking, what percentage of students determined their educators utilized educational technology in a boring manner? The responses from the teachers were evenly split, with four teachers each responding 15% and 25%, respectively. All the participating teachers were surprised that more than 75% of the students revealed that more than 80% of their educational technology experience in the classroom room was termed as 'boring', or not engaging.

The participating educators where then asked, considering the boredom factor of the iGeneration students, do you think more or less technology should be utilized in the classroom? Three of eight teachers shook their heads still in disbelief of the previous result, reflecting on past lessons; three teachers remained undecided and two teachers responded "yes." When told 76.09% of the respondents said the desire was for more technology, two teachers were instantaneously baffled, five teachers nodded in agreement, and one teacher asked me if I was certain I surveyed the G9s and G10s. Educators were then asked, have you ever attempted to use Facebook or Twitter as an educational tool? One teacher instantaneously pointed out the school uses a Twitter handle to share news and activities happening within and around the institution, across high school, middle school, and elementary. The teacher was then asked, what/when was the most recent post from an iGeneration student? She could not think of one, and then shared with the teacher, as well as the others, Facebook and Twitter are social media enemies' number one to an iGeneration student. Her response was, "Here we are as an institution like many other institutions, attempting to virtually promote and share the positives within our campuses, but the students themselves are not interested in the medium identified as most ideal platform to do so."

All teachers were asked if they were surprised by the Facebook and Twitter feedback. Two teachers revealed they had a class group on Facebook two to three academic years ago, but the concept died when those students graduated.  In the end, three teachers were surprised by the Twitter feedback and no one was surprised by the Facebook feedback.  I revealed to the teachers iGeneration students considered mediums, such as Twitter and Facebook, were designed for "old people."  "Old people" were defined by iGeneration students were anyone between 26 to 28 years old and older was considered to be old and the underlining reasoning for not using the identified social mediums (see Appendix G: Figure 6).

**Research Methodology and Analysis**

  **Research, data sources, and analysis.** High school students are often technologically savvy, yet they seem to have shared resistance toward learning with technology.  Chapter 2 explained the history, integration, and uncertainties faced by educators with the improvement of technology and the increase in demand for the use of technology in classrooms by students.  The methodology and need for triangulation for this survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design, was highlighted in Chapter 3.  Items addressed in Chapter 4 were steps taken to organize and conduct the study; data security and validation procedures; parent concerns; assent and consent form procedures; the use of a pilot group; and student and teacher demographics.

  Eight students who had left early said they "just were not feeling it" and desired to leave as no grade was attached to the activity; all eight said they accessed social media during the short time in the room with six of the eight students admitting they did not open the survey at all.  This accounted for two of the incomplete surveys and six non-responses.

Another five students stated they "spaced out" and the survey closed on them; this meant these particular students spent more than eight to 10 minutes on a single question or abandoned the survey, which accounted for another five incomplete surveys taking the tally to seven.  Upon querying what question each of the five students had difficulties with, responses determined that none had an issue with a common question, but each student was still in the first section of the survey and no one had passed the halfway point. Upon querying if they usually "space out" during tests, each student replied "yes," with three of the five students implying in some fashion they had determined a test on their mobile would be a different experience, but the end result was the same.  Initially, I thought these five students had "drifted off" (unknowingly lost focus; to gradually lose focus during an activity) to use social media during the survey, but during the informal conversations, only one of the five students said they checked social media while taking the survey.  This conversation was an eye opener for me as the issue of poor test takers was previously considered, and the eight to 10 minutes closure time for inactivity may have been too short for three of the five students.

**Summary of the Findings**

Of the 83 students who started the survey, 75 students completed the survey.  Students sporadically completed the survey between the 12 to 15 minute marker as well as the 22 to 25 minute marker; the last of the student participant completed the survey within 35 minutes (See Table 18).

Table 18

*Survey Time Interval*

| Time Spent on Survey (Minutes) | Student Departure at Time Interval | Completed Survey | | Total Student Departure |
| --- | --- | --- | --- | --- |
| | | YES | No | |
| <1 to 5 | 1 | 0 | 1 | 1 |
| >5 to 10 | 10 | 2 | 9 | 11 |
| >10 to 15 | 13 | 14 | 10 | 24 |
| >15 to 20 | 23 | 35 | 12 | 47 |
| >20 to 25 | 18 | 51 | 14 | 65 |
| >25 to 30 | 22 | 73 | 14 | 87 |
| >30 to 35 | 2 | 75 | 14 | 89 |
| Total | 89 | | Absent | 9 |

Based on the demographic of the student population, an assumption was made that 90% or more of the participating students are ESOL (English Speakers of Other Languages) students, with English likely to be the students second fluent language and a 21.4% chance that English was a third or a possible fourth language of fluency.

Data revealed the students' behavior pattern in relation to social media was unpredictable with 55.81% of the students stated social media was not accessed during the taking of the survey that lasted a maximum of 35 minutes, but more than 25% of the students stated social media was accessed during the taking of the survey. The survey results revealed more than 14% of the participating students admitted to the addiction or the need to check social media at least once every five minutes. The data illustrated that within a 15-minute timeframe, 34% to 44% of the students could not control their curiosity of what was occurring on social media and were consistently distracted simply from curiosity.

The study addressed the iGeneration student reasoning behind the lack of desire to use Facebook, Tumblr, Twitter and the disinterest in Vines. An element of peer pressure exists within the responses of the participants, however an element of significance to note is, students who admit to being peer pressured to participate on social media also admit to peer pressuring others to participate in the virtual activities that are of personal interest as well.

Query of student interest with educational technology revealed respondents gravitated towards being more engaged when the tool is used for learning, with a 48.94% participant response rate reported feeling more engaged as compared to 19.15% feeling disengaged when learning with technology. The study reveals that 80% of the participants responded they felt bored when teachers use technology in the classroom, although over 65% preferred having technology as a learning tool with a desire for a more captivating approach(es) by the teacher.

**Research questions summary.** The study revealed following findings related to the research questions (RQ), as derived from the literature. The following research questions guided this survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design:

1. How do iGeneration students describe their use of social media software and technology?

2. How do iGeneration students describe their use of educational technology tools and software *within* a class/school environment?

3. How do iGeneration students describe their use of educational technology tools and software *outside* of class/school?

4. How do *teachers* of iGeneration students describe the students' use of educational technology tools and software in the classroom?

*Research Question 1.* *How do iGeneration students describe their use of social media software and technology?* Student participants of this study described their usage of social media software and social media technology in a variety of ways, notably dependent on peer groups. The study revealed that over 55% of the student participants were able to refrain from using social media while focusing on a task that required completion, another 18% attempted to exercise restraint but checked their social media once or twice, while 27% of the participants checked social media a minimum of five times within a twenty-minute time frame.

Data that may be of interest to teachers is, only 5% of the student participants stated he/she does not find social media technology interesting; 60% of the students stated he/she could go without social media up-to two hours *if they were actively engaged* with interesting/interested content; 40% stated he/she *could not* go an hour without checking a single form of social media; 14% stated they check social at least three times every five minutes. Practically speaking, if the average iGeneration student class period spans 45 to 60 minutes, then, 60% of the class enrollment will be able to maintain focus for the class duration while 14% may be constantly distracted from social media curiosity. In hindsight, a teacher will have to be mindful that the moment technology with a social element is introduced to the classroom a minimum 14% of his/her students will instantly lose focus.

At the time of this research study, over 70% of the student participants revealed Whatsapp was their first choice social media platform on the basis of being connected with friends in real time, with another 23% of the participants ranking the platform as a close favorite and 0% of the participants disliking the platform. Collectively, Whatsapp received a 93% preference rating from iGeneration students. The second preferred choice social media platform was YouTube, with over 57% of the participants revealing they spend hours watching

entertainment content as well as educational content, another 31% agreed to utilizing YouTube in a variety of ways while just over 3% of the student participants disliked the medium. Collectively, YouTube received an 88% preference rating from iGeneration students. Interestingly, only 23% of the student participants rated SnapChat as a first choice social medium with over 52% revealing the medium is utilized on the basis that their peers use the medium, while over 8% of the student participants disliked the medium.

Over 56% of the student participants revealed majority of his/her social media usage resulted from peer pressure, with 26% stating that peer pressure for social media escalated while something was trending. Another 23% revealed peer pressure occurred at least once per week to be involved virtually, and 5.77% highlighted a constant feel of peer pressure regardless of what was happening on social media.

***Research Question 2.*** *How do iGeneration students describe their use of educational technology tools and software within a class/school environment?* With the exception of Arabic Studies, the data showed that all courses utilized the use of technology. The iGeneration participants acknowledged and identified the positives in having educational technology as a learning tool within and outside of the classroom. The student participants responded that over 93% of the courses enrolled in, or the subjects currently being studied, had an element of educational technology being used.

The responses on how effectively and efficiently technology is used in the classroom had contrasting feedback between the survey participants and the pilot group. The pilot group participants had 57% in favor for a halt in the way educational technology is presently being used in the classroom, with the exception of a projector, in contrast to the 76% of survey participants urging teachers to continue using technology. Overall, both the pilot group and the

survey participants returned a response of 65% or more admitting to *liking* the use of

technological advancement in the classroom.

Various scenarios were presented to the student participants in an effort to measure the

level of engagement, disengagement, and most likely response or reaction.  Each scenario

returned a response majority in support, or in favor, of the teacher attempt to use technology in

meaningful and engaging way.  Almost 50% of the respondents agreed to being more engaged

when educational technology is being used in the classroom, as compared to 19% that see

technology in the classroom as a distraction.  Approximately 31% of the students stated he/she

was uncertain if technology in the classroom was good or bad when attempting to enhance

learning. As a whole, iGeneration student identify positively with educational technology in the

classroom.

**Research Question 3.** *How do iGeneration students describe their use of educational*

*technology tools and software outside of class/school?*  According to the students open

responses, the study shows, outside of school over 73% of iGeneration students do not gravitate

towards educational technology on his/her own.  The students responds that completed the

related questions, almost 80% responded that homework, a pending summative, or an

approaching assessment are the main reasons for educational technology to be used outside of

class. Over 57% of the students stated YouTube is a valued source for educational material, and

more than 40% of that statistic admitted that the medium intended for learning is also a source

for distraction.

Almost 70% of the survey responses identified Whatsapp as the primary source of

gaining information outside of school, as the students will share notes, videos, pictures and other

materials for learning in real time.

A main drawback of the study was, not all of the student participants completed the survey in its entirety. Only 32% of the participants completed this section of the study, with almost half of the written responses stated in two or three worded responses such as "not sure" or "I don't know". To use the data collected from this study as a justification of iGeneration students' actual behavior toward education technology outside of the classroom, would render the findings impracticable and unrealistic to the actual iGeneration students' behavior. However, the avoidance or shared resistance from survey questions based on education technology reflects the foundation of how and why this study was needed. Evidence to support my claim is the overwhelming data received in all the sections of the study dedicated to social media, a shared attraction. Question 10 asked participants to rank their own addictiveness towards social media by means of a Likert scale (see Appendix G: Figure 10). Results confirmed 60% of students were able to go 2 hours without checking social media, but only 5.45% said social media did not interest them. Forty percent stated they could not go 1 hour without checking a single form of social media, with 14.55% stating they check social at least three times every five minutes, an alarming statistic for a G9 and/or G10 teacher as a student that is distracted every five minutes by an urge rather than a physical or visible source could be categorized as a special need student.

*Research Question 4. How do teachers of iGeneration students describe the students' use of educational technology tools and software in the classroom?* As it relates to, and is stated in the literature, there is a need to determine if the intentions for educational technology in regards to true pedagogy hold valuable significance for teachers of iGeneration students and/or to iGeneration students themself. The study revealed that more than 75% of the students identified more than 80% of their educational technology experience in the classroom room, as 'boring', or not engaging. In an odd contrast, over 76% of the student respondents desired more

technology. Teachers were baffled by this data, and so was I. On paper, the statistic does not reflect a positive or negative review from the iGeneration student perspective in regard to their teachers. However, from an educator's point of view, the data is stating that teachers may be on to something positive but the at the moment the style or method of perfect delivery is just not there yet. I was worried the participating teachers of the study would react negatively to the findings, but each of the 8 teachers in the final stage was curious about the data relating to the boredom rating. Each teacher wanted to know what he/she was doing wrong. Unfortunately, the data could not identify what unappealing actions with educational technology each teacher was guilty of. But, the teachers identified a limitation in the study as evidence of a problem was identified but the actual problem was not identified.

**Chapter 4 Summary**

This survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design, was designed to seek a better understanding of the complex relationship between teachers, iGeneration students, and educational technology with elements of an investigative research. Although this study focused on iGeneration students, the theories and approaches evolved from perceptions and questions posed by Gikas and Grant (2013), Ilomäki (2008), Wallace (2004), Zhao and Frank (2003), Zhao et al. (1998), and Zhao et al. (2000). Some questions initially went unanswered, as there was no fixed response to explain the findings at that point in time and era of education(al) technology. I sought to identify the present issue faced by teachers of iGeneration students in the era of social technology rather than attempting to identify a solution for better use of technology in the classroom. The following research questions guided this survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design:

1. How do iGeneration students describe their use of social media software and technology?

2. How do iGeneration students describe their use of educational technology tools and software *within* a class/school environment?

3. How do iGeneration students describe their use of educational technology tools and software *outside* of class/school?

4. How do *teachers* of iGeneration students describe the students' use of educational technology tools and software in the classroom?

A survey was designed and distributed using the software Qualtrics. Qualtrics was also used to collect responses and analyze data from the student participants. A pilot group of 14 students not part taking in the primary survey was utilized to check wording, terms, explanations, and requirements within the survey. The goal for the pilot group was to assess the language and terminologies of the survey from an iGeneration student's point of view. A post-survey interview was conducted with the pilot group to clarify some of the findings, such as slang terms used by some of the respondents. All 14 students completed and participated each pilot group session. The responses from the interviews were transcribed verbatim, in the event a response was misunderstood or misinterpreted.

At the time of the research, the study site enrolled 133 students in grade 9 (G9) and 121 students in grade 10 (G10), for a target population of 254 students for the study. Students from these grades were targeted to participate in this survey study because they met the iGeneration age requirement at the time of the study, 14 to 16 years old, and were forerunners of the iGeneration era. The final analytic responses and conclusion of the study only considered the 75 completed responses, though 83 students started the survey and 98 students returned their parent-signed consent forms.

The duration of time spent on the survey by participants was recorded. The survey consisted to two sections; a section on social media technology and another on educational technology. Questions consisted of Likert scale responses, open-ended responses, and choice responses.  Survey questions asked participants to rank their own addictiveness towards social media; rank social media preference, share experience with educational technology in the classroom, share experiences of classmate interactions regarding educational technology used, provide statements towards personal experiences with peer pressure related to technology, and place students in the role of the teacher.  Teachers are doing their best to be engaging, but technology is moving too fast to keep up. Some teachers have developed proven methods that deliver results, but students have deemed those methods as boring.

**Chapter 5: Discussion and Conclusion**

**Introduction**

Chapter discussed the literature that lead to this survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design, and the interpretations derived during and after the study concluded. The summary of this study included the discussion and interpretation of the findings, while considering the foundation rationale and methodologies that lead to the purpose of the study. A section on the limitations of the study followed the discussion; a recommendation for further research with conclusion will immediately follow the limitations and suspend the study in Chapter 5.

**Summary of the Results**

The following research questions guided this survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design:

1. How do iGeneration students describe their use of social media software and technology?

2. How do iGeneration students describe their use of educational technology tools and software *within* a class/school environment?

3. How do iGeneration students describe their use of educational technology tools and software *outside* of class/school?

4. How do *teachers* of iGeneration students describe the students' use of educational technology tools and software in the classroom?

The design of this study was focused towards gaining a better understanding of the complex relationship between teachers, iGeneration students, and educational technology. The focal point for the study was iGeneration students, the theories and approaches evolved from perceptions

and questions posed by Gikas and Grant (2013), Ilomäki (2008), Wallace (2004), Zhao and

Frank (2003), Zhao et al. (1998), and Zhao et al. (2000).  Participants of this study met the

iGeneration age requirement, 14 to 16 year olds, forerunners of the iGeneration era.  The age

range of the primary survey participants was 44% 14 year olds, 31% 15 year olds, and 24% 16

year olds.

The responses from the interviews were transcribed verbatim, in the event a response was

misunderstood or misinterpreted.  Information gathered was used to amend the final draft of the

questionnaire, which was distributed to participating students.  Participants for the study

consisted of 75 students from grade 9 (G9) and grade 10 (G10) classes, 15 teachers, and a pilot

group of 14 students.  The 14 pilot group participants were not a part of the 75 survey

participants who contributed to the completed responses used to formulate the discussions and

conclusions.

The student participants survey consisted to two sections, a section on social media

technology and another on educational technology. The final question of the survey asked how

many times was social media checked while taking the survey.  An accumulated tally of 11.64%

said they checked social media more than eight times by the end of the survey, 18.60% said they

checked at least once, and 55.81% maintained that social media was not checked at all. An

impressive 4.66% said they checked social media more than 12 times within the maximum 34

minutes of the survey, with 2.33% stating 15 times or more.   Data were hypothetically stated

that within a 15-minute timeframe, 34% to 44% of the students could control their curiosity of

what was occurring on social media and were consistently distracted by that curiosity.

Question 10 asked participants to rank their own addictiveness towards social media by

means of a Likert scale (see Appendix G: Figure 10).

Results confirmed 60% of students were able to go 2 hours without checking social media, but only 5.45% said social media did not interest them. Forty percent stated they could not go 1 hour without checking a single form of social media, with 14.55% stating they check social at least three times every five minutes, an alarming statistic for a G9 and/or G10 teacher as a student that is distracted every five minutes by an urge rather than a physical or visible source could be categorized as a special need student. The survey results had 23 of the 75 responders specifically identify Facebook and Twitter as a tool for users over 30 years old, and a primary reason for not using these respective social mediums by the iGeneration era. A stand out statistic from the 75 student participants was 84.91% identified their mobile phone as the primary source for accessing social media with 70.31% and 57.14%, respectively, highlighting WhatsApp and YouTube as their top two favorite social mediums.

Pearson product-moment correlation coefficient was conducted on Q1 and Q4, see Appendix D, to assess the relationship between popular social media apps rated by students and the frequency of their usage. To evaluate popular social media apps as rated by students and the usage of social media apps Q1 and Q4 were selected from the survey (see Appendix D). Each question, Q1 and Q4, contained 12 individual options that best depicted popular social media apps that best represented the usage of these apps; re-used as a comparison in Q4. A reliability analysis indicated that there was some interrelatedness among the twelve individual items for popular social media apps (.83) and the usage of these apps (.86). Scores on each statement ranged from 1 to 5. Scores that fell between 1 and 2 indicated the least popular or rarely used apps, while scores above 3 indicated more popular and frequently used apps.

In general, the mean scores for each popular and most frequently used apps were highest among apps containing elements of social networking and entertainment. From the analysis,

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there was a moderate, positive relationship between popularity and usage, which was statistically significant ($r = .65$, $n = 55$, $p < .01$). SPSS returned $n = 55$ to indicate that of the 75 student participants, 55 of them answered both Q1 and Q4. The survey revealed as popularity of software increased the usage of the software increased; and this study showed software does not have to be favored by an iGeneration student to be/become popular because iGeneration students socialize on mediums utilized by other iGeneration users.  Participants were asked if they ever felt peer pressured to use social media technology.  A majority, 55.77%, admitted to being peer pressured to using social media, with 25.00% of the before mentioned majority admitting they applied peer pressure whenever something of their own personal interest was trending.

The study in relation to educational technology revealed 48.94% of the participants felt more engaged with a lesson using technological enhancements as compared to the 19.15% that shared the feeling of being disengaged.  An important note is 31.91% remained uncertain if technology in the classroom was a good or bad element when attempting to enhance learning. The pilot group responded teachers should not try utilizing technology in the classroom beyond basic projector uses with eight of 14 pilot group participants leading the notion, and 40% of the 75 survey participants stating they would rather a class continue without any educational technology involved.  The main reason for this statistic was more than 80% of the survey participants responded they felt bored whenever teachers attempted to use technology within the classroom, with a subsidiary 40.43% stating the boredom was frequently due to the techniques used by the teachers.  Only 12.77% of the student respondents said the teachers' kept them engaged a majority of the time.

**Discussion of the Results**

A main focal point for the study was based on the notion that it is not known to what extent iGeneration students' use of social media detracts interests from learning with educational technology tools. To understand why iGeneration students displayed a shared resistance towards educational technology, first educators must understand the technology that holds the iGeneration era's interest. This survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design, discovered, unlocked, and dispelled a few myths from an educator's point behind the reasons for iGeneration students' disengagements with technology in the classroom. Responses of the participating teachers echoed Frank et al. (2011) statement that, teachers plan lessons and deliver accordingly to the content required finding methods and techniques that work, thus remaining faithful and committed to a proven technique, as highlighted in the literature review. Teacher participants responses complimented the findings from the literature review that stated, "Social media has also been implemented in academic settings to motivate students to participate, share, and learn with other collaborators" (Kabilan et al., 2010, as cited in Tarantino et al., 2013, p. 2).

The top three battles for teachers within the ever present war with students when utilizing technology in the classroom are (a) teachers do not use technology the way students do; therefore, the first challenge is to attempt engagement in unchartered waters; (b) technologies teachers gravitate towards absolutely and undoubtedly bore the students; and (c) common medium/media teachers and students agree on, such as YouTube, are primary sources of distraction for the average iGeneration students. As wonderful as YouTube may be, until the next video experience is presented, teachers are better off saving the videos and replaying them remotely to avoid the teaser videos and video suggestions that are always present.

In the realm of mathematics and science, educators have specialized devices, such as interactive calculators and SMART Boards that allow teachers to utilize technology without opening a browser – the gateway to many social elements for an iGeneration student. This study revealed that the average iGeneration student is tempted to check a form of social media a minimum of three times every 15 minutes, but that average student is capable of focusing for an hour before the urge becomes uncontrollable IF she/he is kept engaged in a non-boring lesson. With 84.91% of the iGeneration students participating is this survey study admitting mobile phones are the primary source for social media fixation, the cry for no cellphone classrooms must be heard by all administrators.

The good news for teachers was 76.09% of the study participants' wanted more technological enhancements in the classroom. Less than 5% of the iGeneration students called for technology in the classroom to be halted, with 65.96% liking the technology currently being used to some extent towards specific teachers. The participants of this survey study, who represented a small portion of the iGeneration, noted teachers were boring. Teachers' efforts were recognized and students wanted those efforts improved. Students desire technology, but dependent on an educator's field of facilitation, the odds may be against him/her pertaining to the software options available when creating engaging lessons within that field of study. For the moment, mathematics and science are safe with specialized devices and medium/media, but other specialized areas must remain creative and engaging. According to study data, students were engaged in the language and art subjects courses, with physical education also utilizing technology. Data in question were dependent on the teachers of the participating iGeneration students of this survey design study, with a qualitative follow-up component of teachers' perspectives of the survey design, at a specific institution. In retrospect, teachers may be losing

specific battles, but are tilting the scales of the technological war when engaging iGeneration students within the classroom.  Teacher strategies when using technology may have been boring, but the intent was recognized.

**Discussion of the Results in Relation to the Literature**

In regard to this study, the literature explored variations of educational learning environments that used and utilized educational technology tools without finding a long term solution that was guaranteed to keep iGeneration students engaged (Frank et al., 2011; Gikas & Grant, 2013; and Ilomäki, 2008).  This study assumed there was a concise reason for the shared resistance iGeneration students between ages 14 to 16 displayed toward using technology as an educational tool, with the goal of uncovering some of those reasons.  The foci of the study were primarily on iGeneration students, how they relate to technology as a learning tool in the classroom, and how iGeneration students interacted with social media.

Picciano et al. (2010) researched the patterns, trends, changes, and transformation of learners and educators over the last decade taking into account student satisfaction and challenges teachers face to adapt to technology, and the study shows that the learners have again transformed and educators are always transforming. Korte and Hüsing (2007) discussed data that showed the highest and lowest percentages of teachers who use ICT in the classroom: United Kingdom (96%), Denmark (95%), Latvia (35%) and Greece (36%), highlighting cases for each that *did not* believe computers had significant learning benefits for students (as cited in Ilomäki, 2008).  This study returned mixed results as the majority of the pilot group believed teachers *should not* attempt to utilize technology in the classroom beyond the use of a projector, but over 70% of the study participants urged teachers to keep using technology as well as explore more creative learning techniques to combat classroom boredom.

Ilomäki (2008) stated, a transformation of teaching and learning practices is needed to better meet the challenges of modern society, and moreover the children of the future. The children of the future then, are now the children of the present, and this study highlights how teaching has been transformed across disciplines with educational technology being utilized within majority of the subjects/courses an iGeneration student partakes in, in the present day classroom. This study shows that all but one subject area, religious studies, utilized technology on a regular basis and the study participants stated religious reasons for the omission of technology from that single subject area.

Teachers attempt new practices and strategies in an effort to keep their students engaged, but teaching has its own variations of complexities that go beyond curriculum delivery and teacher coordination (Frank et al., 2011). Frank et al. (2011), Ilomäki (2008) and Zhao et al. (1998) each agreed that technology benefits a learning environment and the student participants agreed, with over 70% stating they are willing and wanting to embrace various types of educational technology within a learning environment that will enhance learning; regardless of the 80% respondent feedback labeling the current use of technology in the classroom as boring.

Considering the original literature questions posed by Gikas and Grant (2013), Ilomäki (2008), Wallace (2004), Zhao and Frank (2003), Zhao et al. (1998), and Zhao et al. (2000) with a modern perspective to iGeneration students, the results revealed that the literature questions of the past have evolved almost beyond a point of comparison. Zhao and Frank (2003), Zhao et al. (1998), and Zhao et al. (2000) queried why technology was not utilized more in the classroom and lobbied for more educational software. Today, technology *is being utilized* in the classroom and far more educational software exists as compared to the 1998−2003 era. In contrast, at this point in time, teachers have to be mindful of the type(s) of technology they use in the classroom

due to the distractions of social media – a technological element that warranted zero concern to teachers when Zhao and Frank (2003), Zhao et al. (1998), and Zhao et al. (2000) initially stated their concerns. Gikas and Grant (2013) and Ilomäki (2008) hinted at the possible collaboration teachers could virtually-share or virtually-participate in with students by way of technology in the classroom, but since their own literature social media technology has evolved, revolved and revolved again in less than a decade. This continuous evolution of technology returns us to the literature of Zhao, Tan and Mishra (2000) who stated that when young people are invited to use new technologies, they often take the technologies in unanticipated directions. In response, the short answer to this research question is, iGeneration students use of social media technology gravitates to whatever is trending (regardless of popularity) until the next trend emerges; loyalty to a social medium depends on peer group usage.

Upon the competition of this study, I still agreed with Picciano et al. (2010) that when referring to learning and teaching with technology educators will have to adapt to the demands of the iGeneration learners; the respondents demonstrated teachers have adapted and keep adapting regardless of the challenges faced. A main critique of the literature was teachers of iGeneration students were not adapting fast enough, but the iGeneration students disagreed. The students acknowledged that their own interest in software may change overnight but they prefer to have boring yet meaningful and engaging lessons rather than meaningless yet momentarily captivated lessons complete with bells and whistles but without educational substance.

In my youthful days the adults would say children do not know what they want or what is good for them, but I did not have the Internet back then or know much about the world as a 14-year-old. My parents, at 14 years old, knew less than I did, because I had a television with multiple cable channels, which my parents did not have. In present day, 14-year-olds receive

instant notifications on their mobiles about topics, products, and people that interest them. The notifications are sent the moment that related event, action or incident occurs in regardless of where in the world the action or incident occurred. As an adult, if we are not careful with the way we raise our children within this technology age, it may be the children who start saying adults do not know what their children want or what is good for them within this age of technology.

**Limitations**

English teachers were identified as the main participants for this study due to logistical reasons. All but two of the English teachers withdrew from the study because of self-doubt in regards to how educational technology was being utilized within lessons. An astounding 88% and 52% of the participating G9 and G10 students acknowledged English Literature and Language Arts utilized technology in the classroom in an engaging manner. Had more teachers from this discipline participated in the study, more data could have been gathered about the doubts from teachers' perspectives.

In regards to the primary survey participants, an obstacle was students were asked for their age, but not their gender. Though this was a setback to the overall demographic and statistical aspect of the study, the participants and parents for cultural reasons specifically requested the notion. Parents did not know what questions would be asked of their children and the study demonstrated respect towards the cultures of the participants involved; thereby, disregarded the need for a gender demographic. A specific and detailed regional demographic of the actual participants was included when I learned the data had a high risk of being tainted, as it was common practice for the student population to associate with their second nationality rather

than their first nationality, when communicating with non-Middle Eastern personnel. The data would be tainted if the participating students lied about their origin.

The method for collecting data was not conducive for participants considered to be poor test takers. The collection method made considerations on the base notion that 90% of the population were not native English speakers, but failed to recognize that an eight-minute inactivity timer to disable the survey may have been too short for some student participants. The gravitation toward social media during the taking of the survey identified that students require motorization in order to record true behavioral data.

**Implication of the Results for Practice, Policy, and Theory**

An overwhelming limitation was technology. In my opinion, social media applications and social media networks are opened, suspended, and/or discontinued more frequently than most educators learn of the existence. The study results indicated educators 28 years and older were satisfied with the social mediums they already had and exercise little desire to try or seek new out new media. iGeneration students on the other hand gravitate towards the next new shiny virtual social experience, abandoning the previous medium as fast and as easily. Educators above 35 found stability in a single social medium, while their iGeneration students craved the next new thing, for better or worse is of no concern, as long as their friends also use the technology.

Cyber-bullying was not considered for the study, though the topic was part of the initial planning phase. During the pilot group phase and designing the survey, I identified the issue of cyber-bullying warranted a separate study as the demand on the context grew. In an effort to preserve the study in the manner truly intended, all cyber-bullying questions were deleted, but peer pressure questions remained. Peer pressure responses returned 55.77% admitting to being peer

pressured to using social media, with 25.00% of the before mentioned admitting they applied

peer pressure to others. Analyzing the results further, I realized the social circle of the

iGeneration participants was not queried.  The results did not highlight if any of the respondents

had the possibility of being extraverts and/or introverts.

**Recommendations for Further Research**

Recommendations for future studies come in a variation of 4-year plans.  I would

recommend studying iGeneration students at the current tail end of the era, ages 8 to 11.  A

similar study could include social behaviors within and outside the student school environment;

the above-mentioned era of iGeneration students, from personal observation, appeared to be

increasingly anti-social in a face-to-face capacity when outside of their school environment.

Another iGeneration study on 14 to 16 year olds focused on cyber-bullying through social media

could be addressed. From my experiences in the classroom, I have found that students who are

bullied from a single or multiple sources perform poorly academically, slowly become anti-

social, and overtime he/she withdraws mentally and emotional from school life.  I have

witnessed the era of social media bullying being far crueler to students than the physical bullies

of the past, and a study into how severe cyber-bullying affect iGeneration students academically

may be promising.

One trend in the literature that was not touched upon by this research is "cyberbullicide"

(Napolitano, 2013), a term that originated in early 2012.  Cyberbullicide is a term used when

suicide occurs due to direct or indirect harassment that originated online (Napolitano, 2013).

Personal research and further investigation into cyberbullicide revealed the term has faded over

time. The methods of committing suicide among teenagers have escalated over social media,

with teenagers committing suicide live online, while streaming on social media, but without

cases of bullying present, leading me to believe that the suicide occurred for other reasons. An in-depth psychological study is recommended for researchers looking into such cases.

**Conclusion**

The findings revealed several misconceptions educators had about how engaging lessons were when delivered with educational technology. To the best of my knowledge, this study was among the first to address the shared resistance iGeneration students have towards learning with technology, and my approach attempted to get into the mind of the students. An admired attribute of the iGeneration students is their uncontested bluntness. Though this attribute may be deemed a form of unhealthy social behavior due to extensively less physical social interactions as compared to previous generations, the iGeneration era is the first of this kind. They are a generation locked into, and driven by, screens.

In an effort to identify students preferred choice of laptops at the study site, an informal 'stop-and-ask' survey was conducted in the hallways during a single nutrition break period. The goal was to stop-and-ask 30 students from G9 and G10 (a total of 60 students) what type of laptop was in their backpacks. Among the G9s, six of 10 randomly selected students on all three occasions had a Macbook Pro or Macbook Air in their backpacks; for two of the three stops, one student had a Windows based computer and another had a Windows based tablet; in all situations, the remaining students did not have laptops or an iPad. During the informal stop-and-ask survey among the G10 students, six of 10 randomly selected students on the first occasion had a Macbook Pro or Macbook Air in their backpacks, and no one had any Windows based devices or tablets. The second occasion returned five out of 10 had a Macbook Pro or Macbook Air, three students had the new 15" iPad Pro, and no one had a Windows based device. The third stop-and-ask session returned three out of 10 with a Macbook Pro or Macbook Air, two students

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had a Windows based laptop, and one had a Windows based tablet.  Understanding the reason behind a student's choice for his/her chosen platform could also reveal or unlock another piece of the puzzle as to why iGeneration students use technology the way they do.  The stop-and-ask experiment was not included in the study, but the data collected could be meaningful to future research, considering/assuming students are using identical software, but the hardware of choice differs.

The iGeneration craved digital intuition, but not all educators possessed the pizzazz to engage and hold the generation's educational technology curiosity class-in-class-out, week after week.  Because iGeneration students' virtual social experience frequently alters, boredom sets in inside the classroom, but lessons and deliveries do not change as frequently.  Neither during nor after this survey study did I get the feeling of students' understanding of this notion; however, a feeling of sympathy towards teachers making an effort to increase their educational technology portfolio was present.  The average iGeneration student may or may not recognize or comprehend the daily effort and energy that goes into being a teacher, but some have recognized that teachers are trying, or have given up trying, to find the most effective learning methods with educational technology within specific classrooms.

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## Appendix A:  Teacher Technology Usage Observation Sheet

1. Was technology used during the lesson? How?

| | |
|---|---|
| | Was there an introduction? |
| | How did student initially respond? |
| | Was there disgruntles? |
| | What software was used? |
| | Did the teacher have difficulties? |
| | Other |
| | Other |

2. Rank the level of technological creativity used by the teacher.

☐ Novice Level     ☐ Adequate Level     ☐ Proficient Level     ☐ Exemplary Level

3. Rank the level of students' level of engagement <u>during</u> the educational technology lesson.

☐ Not interested     ☐ Fairly engaged     ☐ Mostly Engaged     ☐ Very Engaged

4. Did the students have a chance to interact with the technology during the lesson? How, or why not?

_____

_____

_____

5. Rank the teacher's comfort level <u>during</u> the usage of the educational technology.

☐ High Anxiety     ☐ Low Anxiety     ☐ Fairly Confident     ☐ Confident

6. Rank the teacher's comfort level <u>post</u> usage of the educational technology.

☐ High Anxiety     ☐ Low Anxiety     ☐ Fairly Confident     ☐ Confident

7. Rank the level of students' level of engagement <u>post</u> the educational technology lesson.

☐ Not interested     ☐ Fairly engaged     ☐ Mostly Engaged     ☐ Very Engaged

8. Reflection:

# Appendix B: Letter of Assent

LETTER OF ASSENT

Dear Student:

I am doing a research study about how iGeneration Students' Approach Technology as a Learning Tool, with an Attraction for Social Media Technology. A research study is a way to learn more about people. If you decide you want to be part of this study you will be asked to participate in a survey or questionnaire session, and possibly, in one or two interview(s) with me. The interviews will be conducted at school during the extended break time, after school, or during an SLC assembly, depending on which is most convenient for you. I will also be observing your participation in your classes that are incorporating technology as a learning tool.

There are some things you should know about this study. Your name will not be revealed in the study, but I will be asking you questions about how you personally feel about your classes and the way you learn. I will be recording each interview so I can make sure to get your wording exact. You have the choice of a video recording or an audio only recording. The first round of interviews (the pre-survey interviews) and the second round of interviews (the post-survey interviews), I will be interviewing you individually.

When I am finished with this study, I will write a report about what was learned. This report will not include your name or that you were in the study. The information will be published in the hopes that the research will help teachers and schools do a better job understanding the academic needs and desires of iGeneration students. It may even help our school do a better job in the future of educating technology-driven students like you.

You do not have to participate in this study and not participating will not affect your grade, your relationship with me as your teacher, or anything else about what you do at school. If you decide to stop after we begin, that is okay, too.

If you decide you want to be in this study, please sign your name.

I, _____, want to be in this research study.

_____          _____
(Sign your name here)                                                          (Date)

Thank you for your attention in reading this form and your consideration in if you want or do not want to be in this study.

_____

Investigator: Mr. Andre Dyer     email: ▮▮▮▮▮▮▮▮▮▮▮▮
c/o: Advising Professor: Dr. Connie Greiner
Concordia University – Portland
2811 NE Holman Street
Portland, Oregon  97221

Concordia University – Portland Institutional Review Board
Approved: February 20, 2017; will Expire: February 20, 2018

# Appendix C: Parent Consent Form

**PARENTAL CONSENT FORM**

I consent for my child to participate in the research study titled "iGeneration Students' Approach to Technology as a Learning Tool, with an Affinity for Social Media Technology", that is being conducted by Concordia University - Portland's doctoral candidate Mr. Andre Dyer, MYP Design Technology Teacher at the ▮▮▮▮▮▮▮. My child's participation is voluntary; I do not have to allow my child to take part in the research study if I, or my child, does not want to. My child can stop taking part at any time without penalty or loss of benefits to which we are otherwise entitled. If I decide to withdraw my child from the study after the initial start, I understand that the information provided by my child may not be readily identifiable as my child is not required to give his/her name, an ID number or any other sensitive information usable in identifying them. I understand that my child's responses will be kept private, confidential, digitally locked and secured during the study and will be destroyed after the analyzed results three years after the study is completed.

The following points have been explained to me:
1.  The purpose of this study is to determine if the assumed behavior conferred by educators of iGeneration students is warranted in regards to the students' actual use of technology inside and outside the classroom.
2.  The procedures are as follows: My child's responses will be collected through a survey or a questionnaire. My child may or may not be a part of the pre-assessment or post-assessment group. The survey or questionnaire will take about 20 and 30 minutes to complete. Pre-assessments and post-assessments will take about 10 to 15 minutes to complete. My child will be assessed at a predetermined time that is convenient and will not interrupt or take away from my child's learning opportunities. The study will be done by grade level in a computer lab during a common-core grade level session (i.e.: Language Arts) or another testing environment that the school selects. My child's common-core teacher (i.e.: Language Arts) will also participate to provide a teacher's perspective towards the study.
3.  Data collected from my child will be confidential and no data will ever be reported with my child's name or any identifying factor associated with it. The researcher will not release identifiable results of the study to anyone other than individuals working on the project at the Concordia University - Portland. My child's participation or nonparticipation will have no impact on their enrollment, formatives or summatives.
4.  The data collected will not be sensitive data for the participants. The collected data will be stored in a password-protected file on the researcher's password-protected laptop that will be updated in real-time to a password-protected cloud storage space, to a password-protected database. In the event something happens to the researcher's laptop during data collection - all four passwords are different for added layers of security - and all passwords are required to access the data. Participants of the study are anonymous and the research is confidential. Participants' responses cannot be identified or linked to an individual by the researcher or Concordia University - Portland. The survey responses will be numbered post-survey, thus responses cannot to tracked back to the participants.
5.  There are no anticipated discomforts or stress associated with this study, other than usual study or interview stress.
6.  There is minimal risk, and no foreseen risks associated with this study.
7.  The information from this study will help education specialist and learning professionals understand the benefits and misconceptions of digital learning tools and social media among iGeneration students.
8.  The investigator will answer any further questions about the research, now and during the course of the study. Mr. Andre Dyer can be reached at ▮▮▮▮▮▮▮.

I understand the procedures described above. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this consent form. I agree to the participation of my child and myself in this study.

_____          _____
**Name of Child**                                        Grade


_____          _____      _____
**Name of Parent/Guardian (21yrs or older)**      Signature                     Date


**Mr. Andre Dyer**                                    _____      _____
**MYP Design Technology Teacher**              Signature                     Date
**Email:** ▮▮▮▮▮▮
c/o: Professor Dr. Connie Greiner
Concordia University – Portland
2811 NE Holman Street, Portland, Oregon, 97221

   If you want to speak to a participant advocate, or have additional questions about participants' rights, you can contact the Concordia University IRB Director, Dr. OraLee Branch; phone ▮▮▮▮▮▮; email ▮▮▮▮▮▮▮.

## Appendix D: Survey

iGeneration Students' Approach to Technology Survey

Q1 Rank your FAVORITE choices of social media, with five (5) being the most FAVORITE to one (1) being the least favorite.  Note: Favorite does not mean most used.  Only rank the social media you actually enjoy.

|  | I DO NOT like this medium at all (1) | I like this medium, but not a lot (2) | I like this medium, but I like others a lot more (3) | I like this medium a lot, but it's not my favorite (4) | My absolute favorite medium (5) |
|---|---|---|---|---|---|
| Facebook (1) | ○ | ○ | ○ | ○ | ○ |
| Instagram (2) | ○ | ○ | ○ | ○ | ○ |
| SnapChat (3) | ○ | ○ | ○ | ○ | ○ |
| Tumblr (4) | ○ | ○ | ○ | ○ | ○ |
| Twitter (5) | ○ | ○ | ○ | ○ | ○ |
| Vines (6) | ○ | ○ | ○ | ○ | ○ |
| WhatsApp (7) | ○ | ○ | ○ | ○ | ○ |
| YouTube (8) | ○ | ○ | ○ | ○ | ○ |
| Other: (9) | ○ | ○ | ○ | ○ | ○ |
| Other: (10) | ○ | ○ | ○ | ○ | ○ |
| Other: (11) | ○ | ○ | ○ | ○ | ○ |
| Other: (12) | ○ | ○ | ○ | ○ | ○ |

Q2 The social medium you ranked the highest, why is that your preferred medium to socialize virtually?

Q3 The social medium you ranked the lowest, why is that your least preferred medium to socialize virtually?

Q4 Rank your MOST USED form of social media, with five (5) being the MOST USED and one (1) being the LEAST USED. Only rank the social media you actually use.

| | I DO NOT use this medium at all (1) | I use this medium, but not often (2) | I use this medium, but I use others a lot more (3) | I use this medium often but it's not the one I use the most (4) | I'm glued to this medium. I'm on it constantly (5) |
|---|---|---|---|---|---|
| Facebook (1) | ○ | ○ | ○ | ○ | ○ |
| Instagram (2) | ○ | ○ | ○ | ○ | ○ |
| SnapChat (3) | ○ | ○ | ○ | ○ | ○ |
| Tumblr (4) | ○ | ○ | ○ | ○ | ○ |
| Twitter (5) | ○ | ○ | ○ | ○ | ○ |
| Vines (6) | ○ | ○ | ○ | ○ | ○ |
| WhatApp (7) | ○ | ○ | ○ | ○ | ○ |
| YouTube (8) | ○ | ○ | ○ | ○ | ○ |
| Other: (9) | ○ | ○ | ○ | ○ | ○ |
| Other: (10) | ○ | ○ | ○ | ○ | ○ |
| Other: (11) | ○ | ○ | ○ | ○ | ○ |
| Other: (12) | ○ | ○ | ○ | ○ | ○ |

Q5 If your MOST USED social medium is DIFFERENT from your FAVORITE social medium, please say why. If they are the same, then respond "My most used and favorite social mediums are the same".

Q6 Why do you use the social medium (media) with the two LOWEST ranking(s) from ?
○ Because all my friends are using the medium (1)
○ I truly find the medium entertaining. (2)
○ The medium is a great time wasting outlet. (3)
○ Other: (4) _____

Q7 What device do you use social media on THE MOST?
○ Laptop (1)
○ Tablet (2)
○ Mobile (3)
○ Smart Watch (4)

Q8 What device do you use social media on THE LEAST?
○ Laptop (1)
○ Tablet (2)
○ Mobile (3)
○ Smart Watch (4)

Q9 Comparing and contrasting your most used device to your least used device for social media; EXPLAIN why the two devices are different for your social media experience.

Q10 How addicted are you to social media?
- ○ 0 - I don't use social media at all. (1)
- ○ 1 - I'll check in once a day if I remember to. (2)
- ○ 2 - I use social media up to five (5) times a day, but I'm not an addict. (3)
- ○ 3 - A daily user. I can go 3 to 4hrs without checking some form of social media. (4)
- ○ 4 - I'm so addicted. I can't make it through 1 to 2hrs without checking social media. (5)
- ○ 5 - I'm beyond addicted. I check my device at least three times every 5mins. (6)

Q11 How many combined hours per WEEKDAY (School Days) are you active on ALL your preferred and commonly used forms of social media?  Note: There are 24hrs in a day (12:00am - 11:59pm)
- ○ 0hrs - 2hrs (1)
- ○ 3hrs - 5hrs (2)
- ○ 6hrs - 10hrs (3)
- ○ 11hrs - 14hrs (4)
- ○ 15hrs - 20hrs (5)
- ○ 21hrs - 24hrs (6)

Q12 How many combined hours per WEEKEND (Non-school days) are you active on ALL your preferred and commonly used forms of social media?  Note: There are 57hrs in a weekend (Thursday 3pm - Saturday 11:59pm)
- ○ 0hrs - 3hrs  (1)
- ○ 4hrs - 10hrs (2)
- ○ 11hrs - 20hrs (3)
- ○ 21hrs - 32hrs (4)
- ○ 33hrs - 48hrs (5)
- ○ 48hrs - 57hrs (6)

Q13 Do you feel peer pressured to use social media?
- ○ Yes, absolutely, all the time. (1)
- ○ Yes, sometimes, but not often. (2)
- ○ Yes, but only when something is trending. (3)
- ○ No, my friends don't care what I do virtually. (4)
- ○ No, I'm not a fan of social media. (5)

Q14 Do you pressure your friends to use social media?
- ○ Yes, absolutely, all the time. (1)
- ○ Yes, sometimes, but not often. (2)
- ○ Yes, but only when something is trending. (3)
- ○ No, my friends don't care what I do virtually. (4)
- ○ No, I'm not a fan of social media. (5)

Q15 Is it important that you get likes or views when you post online?
- ○ Yes, absolutely, all the time. (1)
- ○ Yes, sometimes, but its not that important. (2)
- ○ Neutral. I'm 50/50. (3)
- ○ No, my friends don't care what I do virtually. (4)
- ○ No, I'm not a fan of social media. (5)

Q16 List your top three (3) reasons for using social media.

Q17 If a new social medium was to be release this instant, how likely are you to try it out immediately?
- ○ Extremely likely (1)
- ○ Moderately likely (2)
- ○ Slightly likely (3)
- ○ Slightly unlikely (4)
- ○ Moderately unlikely (5)
- ○ Extremely unlikely (6)

Q18 If you discovered or stumbled across an unknown social medium that you liked -but- your friends have never heard of it. How much effort would you put into telling you friends about the unknown medium?
- ○ A great deal of effort (1)
- ○ A moderate amount of effort (2)
- ○ A little effort (3)
- ○ No effort at all (4)

Q19 Explain one element of social media that you absolutely not like.

Q20 If you could improve social media in any way, what would be your suggestion?

Q21 While taking this survey, how many times have to checked social media?
- ○ More than twelve (12) times (1)
- ○ At least eight (8) to twelve (12) times. (2)
- ○ At least five (5) to seven (7) times. (3)
- ○ Maybe three (2) or four (4) times. (4)
- ○ Once, maybe twice. (5)
- ○ No time at all. (6)

Q22 Educational Technology are digital learning tools used by teachers to enhance learning. Have you experienced technology being used in the following courses?

| | Yes (1) | No (2) | Not sure (N/A) (3) |
|---|---|---|---|
| English Literature (1) | ○ | ○ | ○ |
| Language Arts (2) | ○ | ○ | ○ |
| Humanities (3) | ○ | ○ | ○ |
| Theater Arts/Drama (4) | ○ | ○ | ○ |
| Band/Musical Arts (5) | ○ | ○ | ○ |
| Vocal Arts (6) | ○ | ○ | ○ |
| Visual Arts (7) | ○ | ○ | ○ |
| Technology/Design (8) | ○ | ○ | ○ |
| Arabic (9) | ○ | ○ | ○ |
| Arabic for Foreign Learners (AFL) (10) | ○ | ○ | ○ |
| French/Spanish/Other Foriegn Language (11) | ○ | ○ | ○ |
| PE (12) | ○ | ○ | ○ |
| Science (13) | ○ | ○ | ○ |
| Math (14) | ○ | ○ | ○ |
| Math Extended (15) | ○ | ○ | ○ |

Q23 Have you experienced technology being used in the following clubs or sport teams by the teacher or coach?

| | Yes (1) | No (2) | Not Sure (3) |
|---|---|---|---|
| MUN (1) | ○ | ○ | ○ |
| Football (Soccer) (2) | ○ | ○ | ○ |
| Basketball (3) | ○ | ○ | ○ |
| Badminton (4) | ○ | ○ | ○ |
| Track (Any discipline) (5) | ○ | ○ | ○ |
| Chess Club (6) | ○ | ○ | ○ |
| Forenics (7) | ○ | ○ | ○ |
| Swimming (8) | ○ | ○ | ○ |

Q24 When a teacher tries to use technology to enhance a lesson, are you more engaged or distracted? Why?

○ More engaged. This is because... (1) _____

○ Distracted. This is because... (2) _____

○ I'm not sure. This is because... (3) _____

Q25 Imagine this scenario: A teacher takes everyone's cell phone at the start of class. During the lesson, the teacher wants you to be interactive with learning technology, so the phones are returned for an activity. Will you...
- ❍ Follow along with the activity on your phone without getting distracted? (1)
- ❍ Try to follow along but social media occasionally distracts you? (2)
- ❍ Immediately check get distracted on social media but then you focus on the activity afterwards? (3)
- ❍ Lose focus completely and forget about the activity? (4)

Q26 Imagine this scenario: A teacher wants to use more technology with a social element in the classroom (ex: YouTube) but each time he/she tries to, students lose focus on the advertisements or request other videos not related to the lesson. The teacher then stops using technology all together. Would you...
- ❍ Rather have class without the technological enhancements if it keeps the students around you focused? (1)
- ❍ Plead with your classmates to allow the teacher to use technology without ruining the experience? (2)
- ❍ Be completely oblivious that you are the student being the distraction? (3)

Q27 Do you like having technological advancements in the classroom as a learning tool?
- ❍ No, not at all (1)
- ❍ I'm not sure (2)
- ❍ Yes, I do (3)

Q28 As a whole, do you think the way teachers use technology in the classroom is boring?
- ❍ Yes, its always boring (1)
- ❍ Yes, most of the time its boring (2)
- ❍ No, its only boring sometimes but not often (3)
- ❍ No, its never boring (4)

Q29 In your opinion, should teachers use more or less technology in the classroom? Why?
- ❍ Less, because: (1) _____
- ❍ More, because: (2) _____

Q30 Outside of the classroom, how likely are you to use technology to enhance your learning? In this case, enhancing your learning means to read, study, and learn new meaningful content for your studies.
- ❍ Very likely (1)
- ❍ Slightly likely (2)
- ❍ Slightly unlikely (3)
- ❍ Very unlikely (4)

Q31 Have you ever felt peer pressured by a FRIEND into using a learning software to enhance your learning?
- ❍ Yes, absolutely, all the time. (1)
- ❍ Yes, occasionally (2)
- ❍ Not really (3)
- ❍ No, never. (4)

Q32 Have you ever felt pressured by a TEACHER into using a learning software to enhance your learning?
- ○ Yes, absolutely, all the time. (1)
- ○ Yes, occasionally (2)
- ○ Not really (3)
- ○ No, never. (4)

Q33 Have you ever felt pressured by the SCHOOL into using a learning software to enhance your learning?
- ○ Yes, absolutely, all the time. (1)
- ○ Yes, occasionally (2)
- ○ Not really (3)
- ○ No, never. (4)

Q34 How likely are you to use technology to genuinely learn new content for a class, on your own, for no reason at all?
- ○ Extremely likely (1)
- ○ Slightly likely (2)
- ○ Slightly unlikely (3)
- ○ Extremely unlikely (4)

Q35 Do you think the rapid advancements in social media has made it very difficult for students to learn with technology today? Why?
- ○ Yes (1) _____
- ○ No (2) _____

Q36 What suggestion(s) would you give to teachers trying to enhance the learning content of his/her course with technology?

Q37 From a student perspective, what is the extreme drawback of technology being used a learning tool today?

Q38 How old are you at the time of taking this survey?
- ○ 14yrs old (1)
- ○ 15yrs old (2)
- ○ 16yrs old (3)

Q39 You've made it to the end. While taking the second half of survey, how many times have to checked social media?
- ○ At least fifteen (15) times or more. (1)
- ○ At least twelve (12) to fifteen (15) times. (2)
- ○ At least eight (8) to eleven (11) times. (3)
- ○ At least five (5) to seven (7) times. (4)
- ○ Maybe three (3) or four (4) times. (5)
- ○ Once, maybe twice. (6)
- ○ No time at all. (7)

# Appendix E: Teacher Consent Form

**TEACHER CONSENT FORM**
(Complete in Duplicate: Please sign both copies, keep one and return one to the researcher.)

I, _____, agree to participate in a research study titled "IGENERATION STUDENTS' APPROACH TO TECHNOLOGY AS A LEARNING TOOL, WITH AN AFFINITY FOR SOCIAL MEDIA TECHNOLOGY" conducted by Mr. Andre Dyer, Investigator from the Department of College of Education at the Concordia University - Portland under the guidance of Dr. Connie Greiner, Professor at Concordia University - Portland. I understand that my participation is voluntary. I can refuse to participate or stop taking part without giving any reason, and without penalty or loss of benefits to which I am otherwise entitled. I can ask to have the information I give to the study be removed, if I wish.

The purpose of this study is to determine if the assumed behavior conferred by educators of iGeneration students is warranted in regards to the students' actual use of technology inside and outside the classroom. If I volunteer to take part in this study, I will be asked to do the following things:

1) Answer questions about my teaching style and practices when using technology in the classroom; my students' behavior, learning styles and attitudes towards educational technology; and perceptions towards technology learning tools and digital devices inside and outside the classroom from a teacher's perspective. I will also answer questions as to how these behaviors, perceptions and attitudes influence my motivation and my preparation as a teacher inside and outside the classroom. I am aware that this process will involve a 20 to 30 minutes online questionnaire and a possible face-to-face pre-study or post-study interview that will be recorded using a digital voice recorder.

2) I may be contacted by the interviewer (Mr. Andre Dyer) for a second interview to gain additional information or to clarify statements given in the first interview.

3) If interviewed, my information will be kept and I may be contacted in 2 years for a follow-up study.

4) There will be no direct benefits to me through my participation in this study, but the researcher hopes to learn more about teacher of iGeneration students, their learning behaviors and social media practices during technology-based lessons. The study seeks to provide beneficial knowledge that will enrich teacher preparation for lessons, be more engaging towards iGeneration students, and enhance the teaching profession.

5) There are no anticipated discomforts or stress associated with this study, other than usual study or interview stress. There is minimal risk, and no foreseen risks associated with this study.

6) I may or may not receive an incentive if I am selected to participate in the interview phase of the study – which could be in the form of refreshments.

7) No individually identifiable information about me, or provided by me during the research will be shared with others without my written permission - except if it is necessary to protect my welfare or if required by law.

8) If interviewed, I will be assigned an identifying number and this number will be used on all of the transcriptions – not my name. After the recording is transcribed, the researcher will delete the recording to protect your privacy by not keep a recording of your voice. All other documents will be deleted three years after the study is over.

9) The investigator will answer any further questions about the research, now or during the course of the project.

10) I understand that I am agreeing by my signature on this form to take part in this research study and understand that I will receive a signed copy of this consent form for my records.

_____   _____   _____
**Name of Teacher Participant**                Subject Area                    Grade Level (s)

                                          _____   _____
                                          Teacher Signature               Date

**Mr. Andre Dyer**
**MYP Design Technology Teacher**
**Email**█████████████                    _____   _____
c/o: Professor Dr. Connie Greiner         Signature                       Date
Concordia University – Portland, 2811 NE Holman Street, Portland, Oregon, 97221

If you want to speak to a participant advocate, or have additional questions about participants' rights, contact the Concordia University IRB Director, Dr. OraLee Branch; phone (████████████; email ████████████.

Table 2

*Detailed Research Protocol Matrix*

| Stage | Step Taken | Action | Participants |
|-------|-----------|--------|--------------|
| 1 | Meet administrators:<br><br>- Director<br>- Superintendent<br>- HS Principal | Request permission to conduct study at the institution. | Director<br>Superintendent<br>Principal |
| 2 | Meet English department teacher:<br><br>- Head of English<br>- G9 and G10 English teachers<br><br>Recruiting teacher participants:<br>- Distribution of teacher consent forms | Discuss the purpose of the study<br><br><br>Request participation for the study | Potential teacher participants |
| 3 | Recruiting student participants:<br>- Distribution of parent consent forms<br>- Distribution of student assent forms | Discuss the purpose of the study<br><br>Request participation for the study | Potential student participants |
| 4 | Recruiting pilot group participants:<br><br>- Distribution of parent consent forms<br>- Distribution of student assent forms | Discuss the purpose of the study<br><br>Request participation for the study | Potential pilot group participants |
| 5 | Meet the parents:<br><br>- Distribution of parent consent forms<br>- Distribution of student assent forms | Discuss the purpose of the study<br><br>Request participation for the study | Parents of potential student and pilot group participants |

| | | | |
|---|---|---|---|
| 6 | Collection of forms:<br><br>- Teacher consent forms<br>- Parent consent forms<br>- Student assent forms | Tally number of potential participants:<br><br>- Teachers<br>- Students<br>- Pilot group | N/A |
| 7 | Pilot Phase A<br><br>- Session One<br>- Session Two | Session one:<br><br>- Meet and greet<br>- Expectations<br><br>Session two:<br><br>- Examine draft for survey questions | 14 student participants |
| 8 | Classroom observations:<br><br>- G9 classrooms<br>- G10 classrooms | Observing iGeneration students and teacher participants in their natural environment with educational technology. | Participating teachers and iGeneration students |
| 9 | Teacher Interviews: Phase I:<br><br>- Pre-survey interview<br>- Informal questionnaires | Teacher Interview Phase I:<br><br>- Teacher interview<br>- Teacher questionnaire<br>- Organizing observation schedules | 12 teacher participants |
| 10 | Classroom observations:<br><br>- G9 classrooms<br>- G10 classrooms | Observing iGeneration students and teacher participants in their natural environment with educational technology. | Participating teachers and iGeneration students |
| 11 | Pilot Phase B:<br><br>- Session Three<br>- Session Four | Session three:<br><br>- Evaluation of draft for survey questions<br>- Evaluation of Qualtrics software | 14 student participants |

|    |                                          | Session four:                                                                                          |                                                        |
|----|------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
|    |                                          | - Finalization of survey questions<br>- Trial run of Qualtrics software                                |                                                        |
| 12 | Classroom observations:<br>- G9 classrooms<br>- G10 classrooms | Observing iGeneration students and teacher participants in their natural environment with educational technology. | Participating teachers and iGeneration students |
| 13 | Survey Phase                             | Administering the survey to students participants.                                                     | 83 student participants                                |
| 14 | Initial analyzation of survey results    | Analyzing the survey results before returning to the pilot group with the findings.                    | N/A                                                    |
| 15 | Pilot Phase C:<br>- Session Five<br>- Session Six | Session five and six<br>- Post-survey interviews<br>- iGeneration interpretation of the findings | 14 student participants                                |
| 16 | Teacher Interview: Phase II              | Teacher Interview: Phase II<br>- Acquiring teacher responses to survey questions.<br>- Revealing survey responses<br>- Revealing survey findings<br>- Recording teacher post-survey responses. | 8 teacher participants |
| 17 | Summary of Findings                      | Summarizing the findings and answering the research questions.                                          | N/A                                                    |

Table 19

*Descriptive Results for Popular Social Media Apps*

| Items | Mean (SD) |
|---|---|
| Facebook | 1.86 (1.19) |
| Instagram | 3.85 (.97) |
| SnapChat | 4.20 (1.06) |
| Tumblr | 2.21 (1.43) |
| Twitter | 2.78 (1.34) |
| Vines | 2.13 (1.24) |
| WhatsApp | 4.63 (.66) |
| YouTube | 4.41 (.84) |
| Other: Entertainment | 3.29 (1.16) |
| Other: Social | 2.80 (1.14) |
| Other: miscellaneous | 1.83 (.98) |
| Other: communication | 2.00 (2.00) |

Table 20

*Descriptive Results for the Usage of Social Media Apps*

| Items | Mean (SD) |
|---|---|
| Facebook | 1.17 (1.15) |
| Instagram | 4.04 (1.18) |
| SnapChat | 4.35 (1.29) |
| Tumblr | 1.85 (1.39) |
| Twitter | 2.45 (1.45) |
| Vines | 1.78 (1.10) |
| WhatsApp | 4.56 (.79) |
| YouTube | 4.44 (.77) |
| Other: Entertainment | 2.58 (1.24) |
| Other: Social | 1.50 (.84) |
| Other: Miscellaneous | 1.25 (.50) |
| Other: Communication | 1.00 (.00) |

Legend:
- More than twelve (12) times
- At least eight (8) to twelve (12) times
- At least five (5) to seven (7) times
- Maybe three (3) to four (4) times
- Once, maybe twice
- No time at all
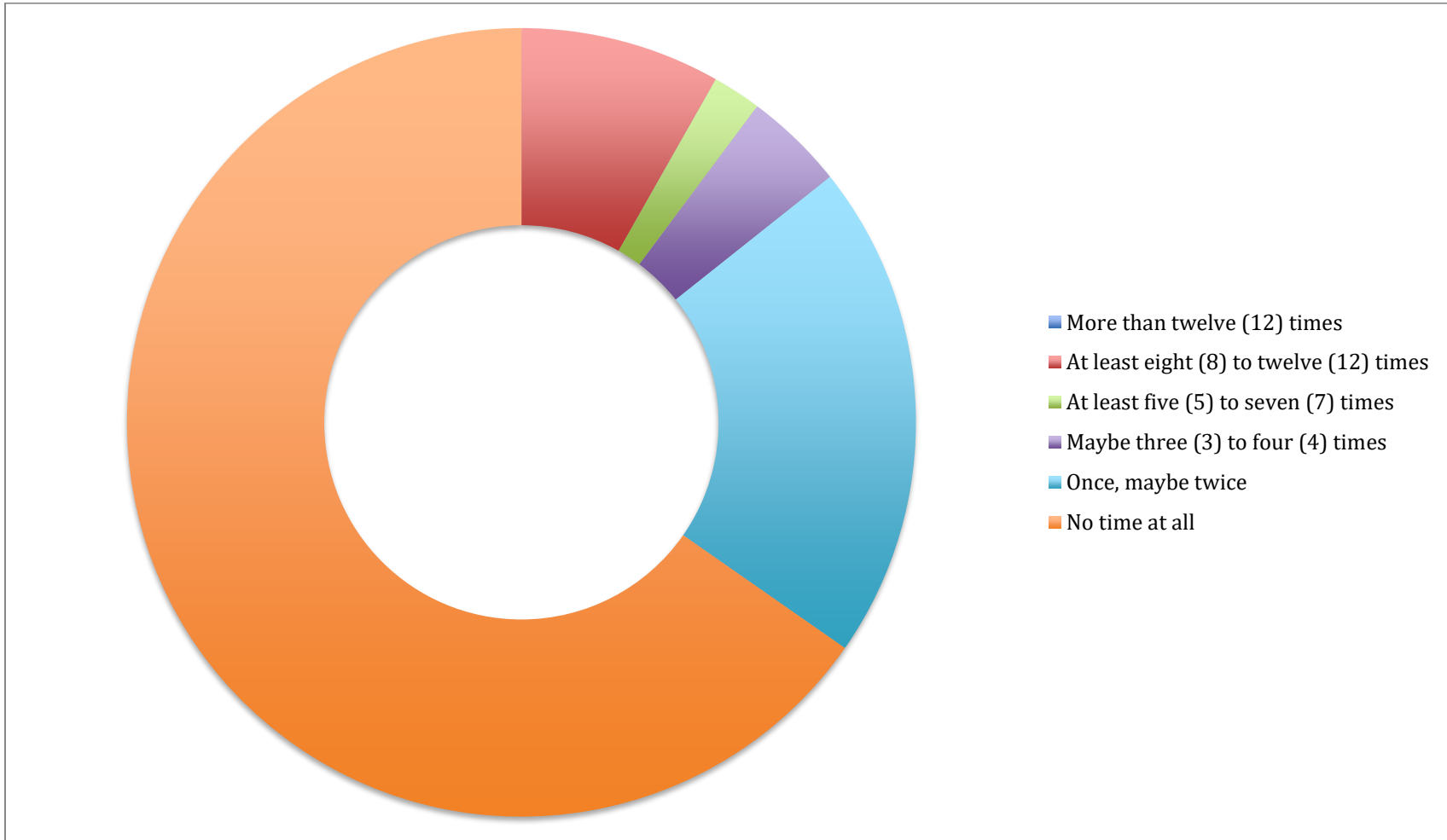
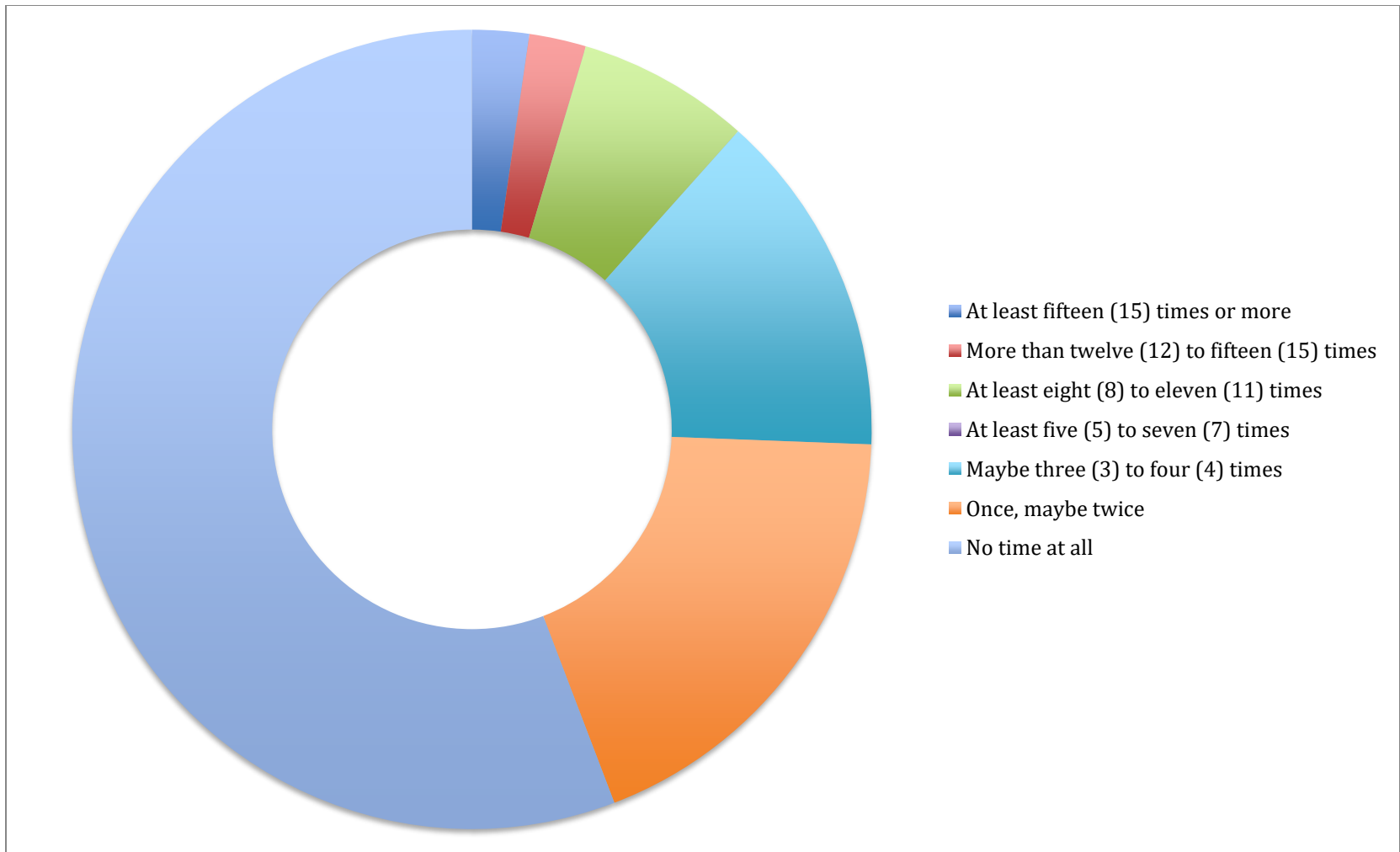*Figure 4.* Social Media Usage Data, at the Halfway Point, While Taking the Survey

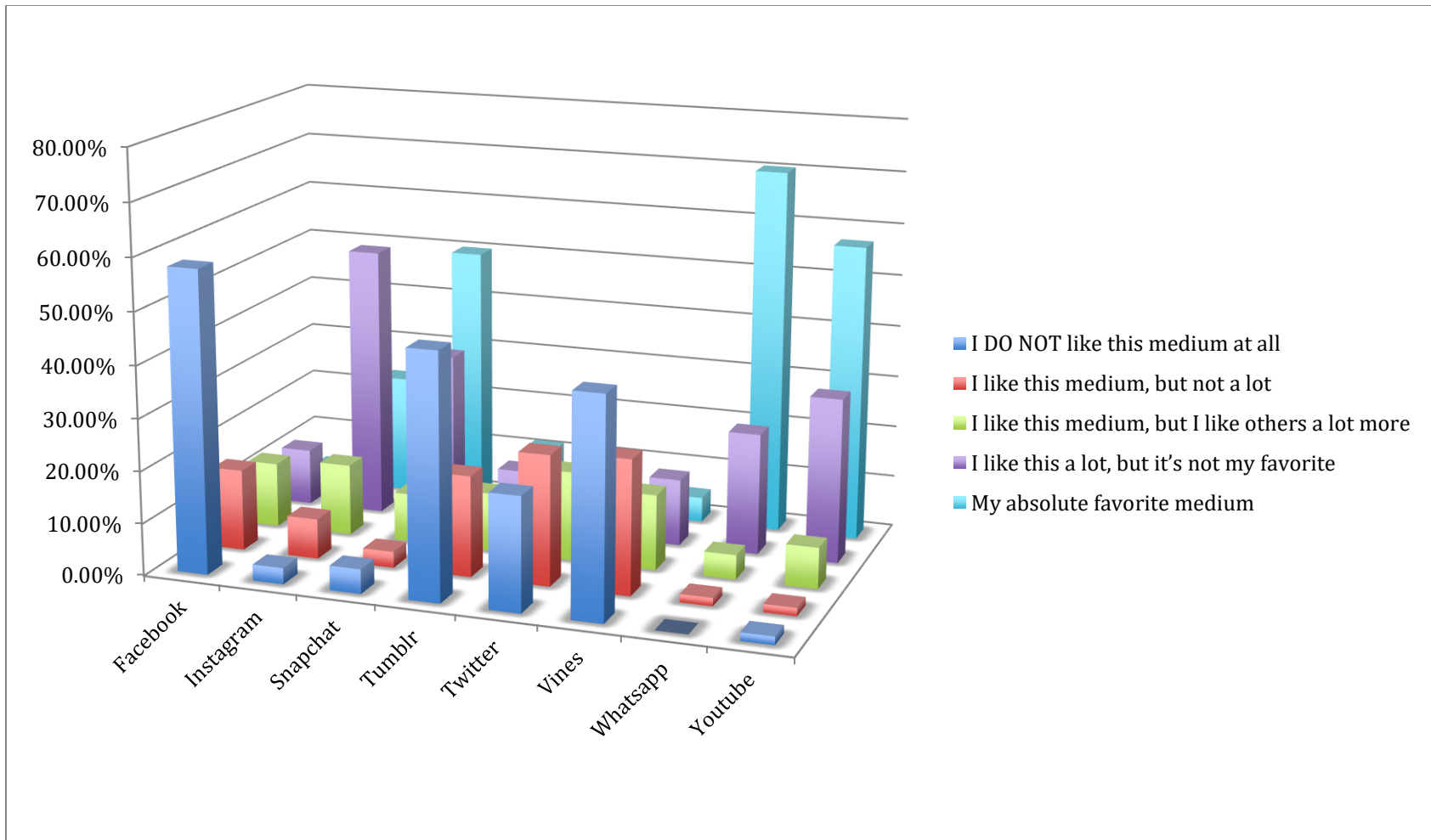*Figure 5.* Social Media Usage Data for the Duration of the Survey

*Figure 6.* Favorite Social Medium versus Disliked Social Medium

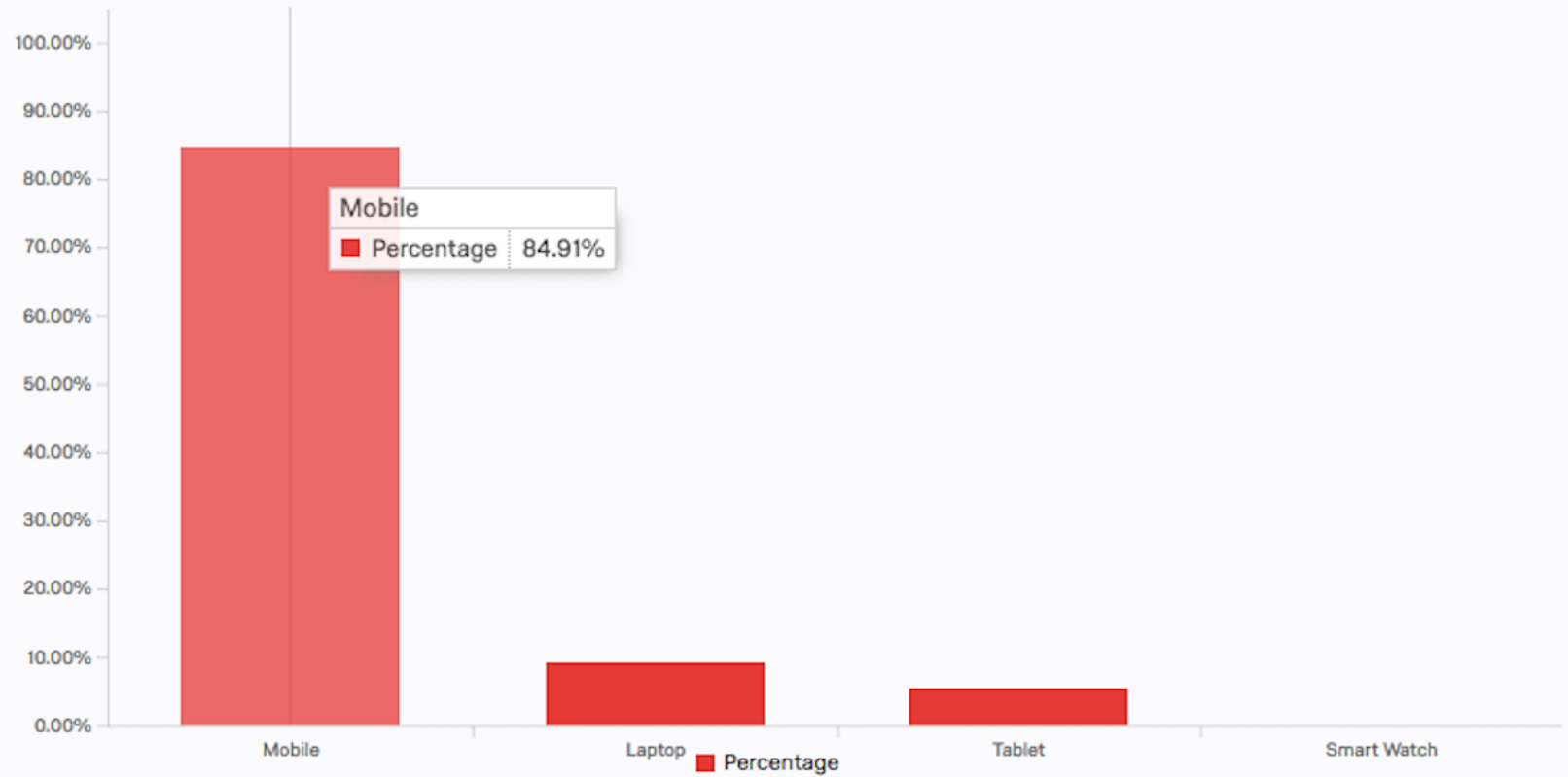## What device do you use the most to access social media?

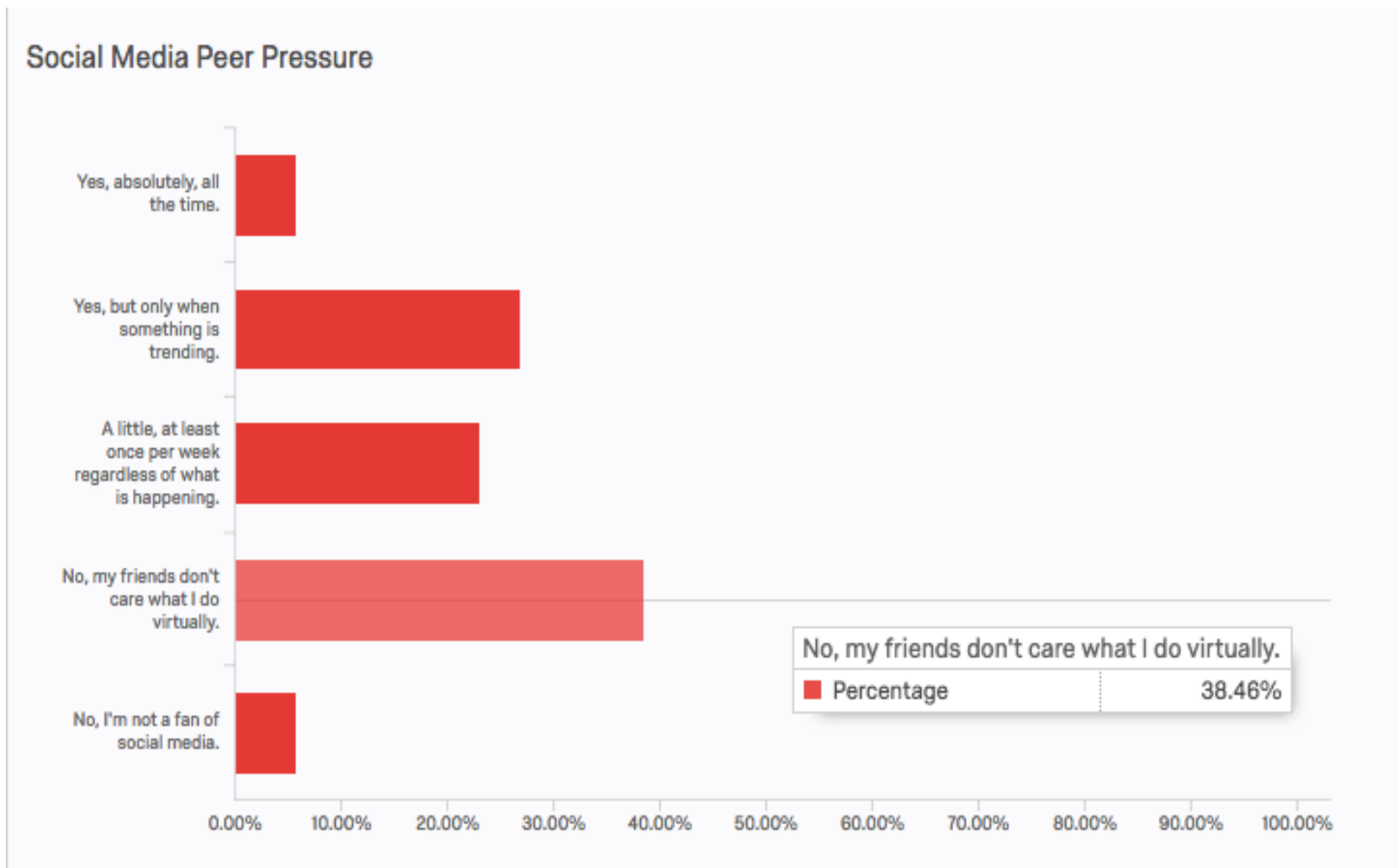*Figure 7.* The Device Used to Access Social Media the Most

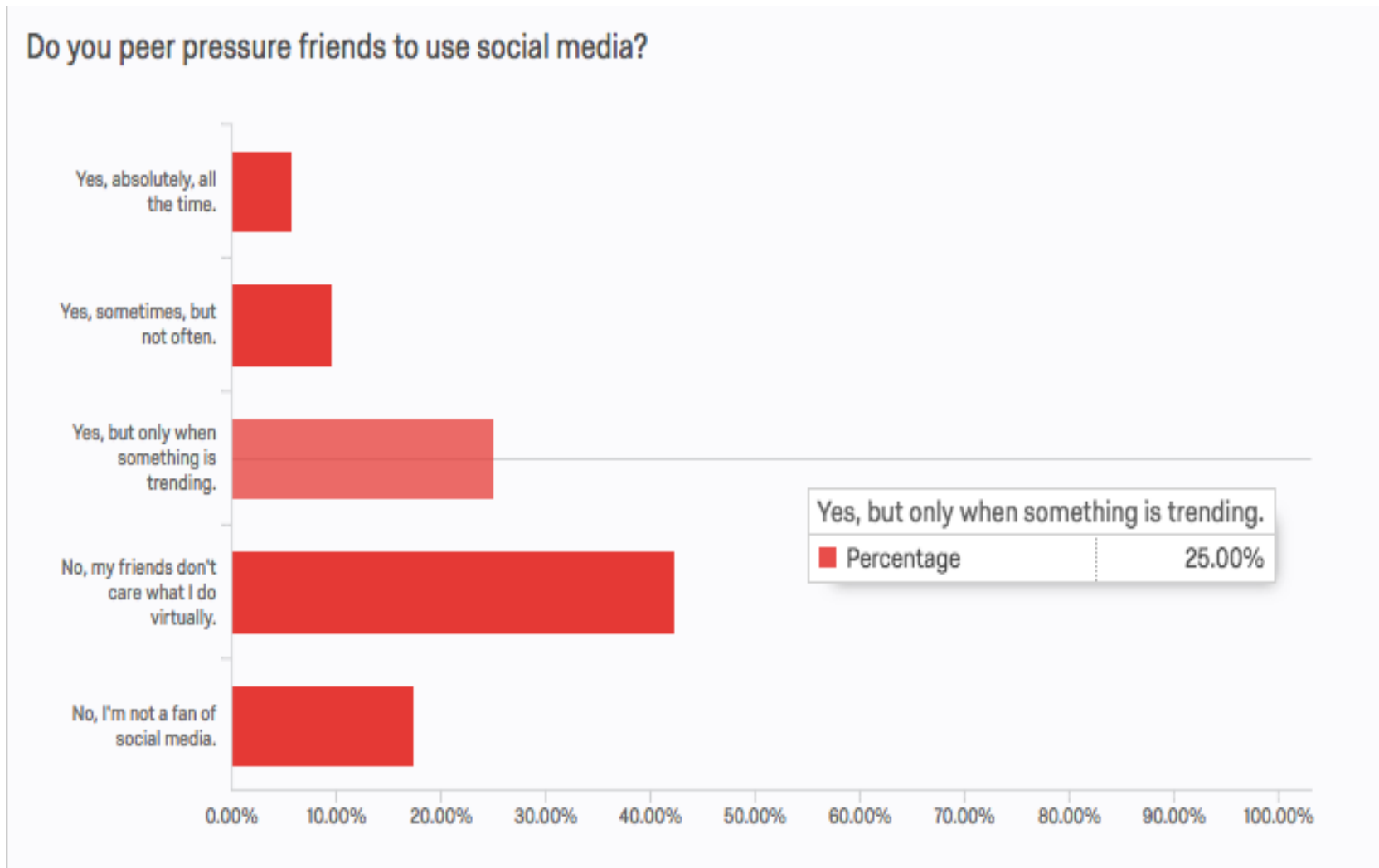*Figure 8.* Social Media Peer Pressured Bar Chart

*Figure 9.* Social Media Peer Pressuring Bar Chart

## Q10 - How addicted are you to social media?

### Social Media Addictiveness

| # | Field | Percentage |
|---|-------|-----------|
| 1 | 0 - I don't use social media at all. | 5.45% |
| 2 | 1 - I'll check in once a day if I remember to. | 1.82% |
| 3 | 2 - I use social media up to five (5) times a day, but I'm not an addict. | 14.55% |
| 4 | 3 - Accdict. But I can go 2 to 3hrs without checking some form of social media. | 38.18% |
| 5 | 4 - I'm so addicted. I cannot make it through 1hr without checking social media. | 25.45% |
| 6 | 5 - I'm beyond addicted. I check my device at least three times every 5mins. | 14.55% |

*Figure 10.* Social Media Addiction Rating

# Appendix H: Teacher Pre-Survey Interview Protocol

Teacher Pre-Test Interview Protocol (Phase I)

Introduction:

Thank you for taking the time to speak to me today. This interview will probably take 15-25 minutes to complete. The purpose of this interview is to get a better understanding of your approach teaching, and student inaction, when using educational technology with iGeneration students. This interview is for research purposes only and will be confidential. The interview will be transcribed. Do you have any questions or concerns?

We will start off with some background questions:

1. What department(s) are you assigned to?

2. What subject(s) do you teach?

3. What are the present issues encountered when interacting/facilitating/instructing iGeneration students in the classroom?

4. What are some issues encountered with iGeneration students that have been related to social media technology?

5. Do you allow students to use devices in your classroom as a learning tool?

6. How long does it take for students to become disengaged from your lesson, after you have introduced technology in your class session?

7. In regards to time, how much do you tend to use/spend before transitioning into/with technology during your instruction time?

8. Reflecting on the last 10 consecutive class sessions where educational technology was utilized, how many of those sessions would you consider the use of the educational technology a *failure/fail attempt,* when engaging iGeneration students?

9. Identify your preferred choice of educational technology? Provide a reason for your selection.

10. On a scale of 1 to 5, 1 being the lowest and 5 being the highest, rank the level of pressure felt professionally to utilize technology in the classroom.

Thank you so much for answering all my questions and participating in my study.

**Appendix I: Teacher Post-Survey Interview Protocol**

Teacher Post-Test Interview Protocol (Phase II)

Introduction:
Thank you for taking the time to speak to me today. This interview will probably take 20-35 minutes to complete. The purpose of this interview is to understanding of your views as a teacher of iGeneration students, in regards to a survey recently completed by iGeneration students. This interview is for research purposes only and will be confidential. The interview will be transcribed. Do you have any questions or concerns?

We will start off with some background questions:
1. What department(s) are you assigned to?

2. What subject(s) do you teach?

3. What percentage of students do you think determined their educators/instructors utilized educational technology in a boring manner?

4. Considering the boredom factor of the iGeneration students, from a teacher's perspective, do you think more or less technology should be utilized in the classroom?

5. Please share your thoughts regarding this statement: Over 80% of iGeneration students stated technology use within the classroom was boring, with 76% of the respondents stating their desire for more technology.
6. Have you ever attempted to use Facebook, Twitter or another social media platform as an educational tool?
   a. If yes, when was the most recent post, or the last post, made by an iGeneration student?
   b. If yes, describe the experience from an educational/instructional point-of-view.

7. Please share your thoughts regarding the use of Facebook, Twitter or another social media platform as a learning tool.

8. iGeneration students label social media platforms such as Facebook and Twitter as a media tool for "old people", as in people over the age of 30, how does that label influence/strategies your approach to teaching with technology from this point forward?

9. Reflecting on your teaching/facilitating experience with iGeneration students, are you motivated or encouraged by your students to use technology more or less during lessons? Why/How?

10. With the exception of a digital projector, do you (or have you) attempt(ed) to utilize other educational technology tools in the classroom with iGeneration students? Why or why not?

Thank you so much for answering all my questions and participating in my study.

# Appendix J: Statement of Original Work

The Concordia University Doctorate of Education Program is a collaborative community of scholar-practitioners, who seek to transform society by pursuing ethically-informed, rigorously-researched, inquiry-based projects that benefit professional, institutional, and local educational contexts. Each member of the community affirms throughout their program of study, adherence to the principles and standards outlined in the Concordia University Academic Integrity Policy. This policy states the following:

### Statement of academic integrity.

As a member of the Concordia University community, I will neither engage in fraudulent or unauthorized behaviors in the presentation and completion of my work, nor will I provide unauthorized assistance to others.

### Explanations:

### *What does "fraudulent" mean?*

"Fraudulent" work is any material submitted for evaluation that is falsely or improperly presented as one's own. This includes, but is not limited to texts, graphics and other multi-media files appropriated from any source, including another individual, that are intentionally presented as all or part of a candidate's final work without full and complete documentation.

### *What is "unauthorized" assistance?*

"Unauthorized assistance" refers to any support candidates solicit in the completion of their work, that has not been either explicitly specified as appropriate by the instructor, or any assistance that is understood in the class context as inappropriate. This can include, but is not limited to:

- Use of unauthorized notes or another's work during an online test
- Use of unauthorized notes or personal assistance in an online exam setting
- Inappropriate collaboration in preparation and/or completion of a project
- Unauthorized solicitation of professional resources for the completion of the work.

## Statement of Original Work

I attest that:

1. I have read, understood, and complied with all aspects of the Concordia University-Portland Academic Integrity Policy during the development and writing of this dissertation.

2. Where information and/or materials from outside sources has been used in the production of this dissertation, all information and/or materials from outside sources has been properly referenced and all permissions required for use of the information and/or materials have been obtained, in accordance with research standards outlined in the *Publication Manual of The American Psychological Association*

_____

Digital Signature

_____Andre St. Claire Dyer_____

Name (Typed)

_____

Date