

Students' Perceptions of Preparation for Online Graduate Course Work

Lin B. Carver

School of Education and Social Services, Saint Leo University,
Florida, United States;

Georgina Rivers-Singletary

School of Education and Social Services, Saint Leo University,
Florida, United States

ABSTRACT

An anonymous online survey was used to understand participants' perceptions about their preparation for online coursework. Sixty students from five graduate programs in education completed a 1-4 Likert scale survey with 20-questions and six open-ended responses. Quantitative responses from the 20 questions were divided into two subgroups, those younger than or equal to 40 years of age, and those over 40 years of age based on Prensky's date for the beginning of the digital native group. Qualitative data were collected through 6 open-ended questions from the same survey. Data revealed that both subgroups felt well prepared when registering for online courses. However, when it came to overall preparedness for using technology, those over 40 years of age did not view themselves as well prepared as those younger than 40. Using digital resources outside of the learning management system presented more significant challenges to the older subgroup of learners. Two factors impacting graduate students' online performance became evident through this study; the impact of technology experience rather than age and what is meant for a student to be well-prepared for online course work.

Keywords: Digital Natives; Digital Immigrants; Online Learning; Graduate Students; Educational Technology.

INTRODUCTION

Online learning has become an essential component in higher education as a result of technological advances. In the United States, more than 6,000,000 higher education students were enrolled in distance education coursework during the fall of 2017 [1]. The online venue is particularly attractive to adult learners because of their many obligations. They need to balance work and family obligations while still finding time to complete coursework [2]. Higher education classes appeal to adults of all ages. In graduate education courses, students can range in age from their twenties through their sixties or beyond. Consequently, colleges and universities have both students born after 1980 who were raised on technology as well as baby boomers and Gen Xers who may have had less exposure to technology during their formative years [3].

Online courses provide the flexibility that appeals to adult learners, but its structure may present additional challenges for those learners who are less comfortable with technology. Orlando and Attard [4] warned that "teaching with technology is not a one size fits all approach as it depends on the types of technology in use at the time and also the curriculum content being taught" (p. 119). There are additional factors such as equipment type and the approach to content with the equipment that are important for course designers to consider when choosing appropriate teaching pedagogy and experiences for students' knowledge construction in online courses. Despite the challenges technology can present, it is "often taken for granted that technologies can 'enhance learning'" [5] (p. 6) because it is perceived as an important mechanism to increase student engagement [6]. Various research studies have compared online learning and face-to-face instruction. For example, Zhao et al. [7] completed a meta-analysis of studies of online learning conducted since 1998 and found that these studies recorded better student learning outcomes from online courses than from face-to-face instruction. Zhao et al.'s [7] research posited that increased options for two-way interaction might be responsible for this online advantage. Similar positive outcomes were reported by Means et al. [8] in their analysis of 56 studies of online education and found that learners in online settings significantly outperformed those who received instruction in face-to-face settings in the use of metacognitive strategies such as self-reflection, self-explanation, and self-monitoring. Metacognitive strategies are needed by candidates when applying class concepts in the real-world setting.

PREPARING FOR ONLINE LEARNING

However, not all online learners come to their course work with the same background knowledge or experiences. Some learners might experience more difficulty embracing the advantages that online courses offer if their technology skills are not as well developed as those of other learners. In preparing learners for online coursework, Newman and Dickinson [9] stressed the importance of ensuring that all learners have a solid technological foundation. They stressed the importance of using online videos, tutorials, and workshops to help learners understand and manipulate the technology used in online courses. Newman and Dickinson [9] recommend that all learners should be required to access these additional resources because it is difficult for learners to identify what they do not know without them. Therefore, it is crucial that online training is organized, coherent, and clear [10] in order to help students to persist and succeed in online coursework [11].

Providing technological tools and additional resources is an important consideration, but online courses developers must also consider the learners' previous experiences with technology. Most students 40 years old and older did not use computers during their formative years, so they may feel less confident about their technological skills due to having fewer experiences with technology [12]. At the same time, younger learners who may possess and demonstrate proficiency in their digital skills may lack the knowledge of how to apply these technological skills to enhance their learning. Because today's graduate students are very diverse in age, we must consider the technological differences in skills and perceptions within this group of learners to better meet their needs.

Prensky [13] proposed the idea of digital natives and digital immigrants by dividing learners into the two groups. Digital immigrants are individuals born before 1980, while those digital natives are those born after 1980. Bennett, Maton, and Kervin [14] and Ransdell [15] supported Prensky's position by positing that the differences between digital natives and digital immigrants had

significant implications for educators. Both sets of researchers indicated that because of their understanding of the range of digital tools available and ways of processing and using information, digital natives were better prepared to be successful in online education. Bennett, Maton, and Kervin [14] found that digital natives interact differently from digital immigrants in the online environment. Digital natives are known to be able to use and manipulate technology in various settings (i.e. work, play, home) while digital immigrants tend to use it for a specific purpose, specifically work, instead of leisure. Underwood [16] further supported Prensky's views by identifying a gap or 'digital disconnect' between digital natives and digital immigrants. Specifically, digital divide in this case goes beyond access to technology and connectivity to the actual skills needed to engage and function in a digital world [16].

Keengwe and Anywanu [17] further investigated this area. They determined that the majority of undergraduate students were competent in basic computer technology applications such as word processing, email, and PowerPoint supporting Prensky's position. Bitter and Lagacy [18] determined that traditional college-age students were also comfortable using iPods, blogs, and other applications. Palfry and Gasser [19] found that younger students working in the online environment tended to be more creative and self-reliant than older learners. Ransdell [15] also examined the differences between older and younger online learners. He determined that older online learners go beyond the given information and tend to make more extensive inferences about the content as compared to younger learners.

Contrary to Prensky's and other's more static view of technology proficiency being determined by age and consequent exposure since birth, Fernandez and Goldberg [20] indicated that the brain is entirely flexible. They pointed to the research on learning that indicated individuals never lose the ability to adapt, learn, and generate new connections. These new connections support their ability to learn successfully in the online environment. Herther [21] further supported this position by stating that the brain is "intrinsically flexible and eminently trainable" (p. 17). Small et al. [22] provided additional evidence to support this concept by investigating individuals' brain activity while they were searching the internet. Through brain activity imaging, the researchers compared the brain activity during internet searches of those with less experience conducting internet searches with those who had more experience conducting searches. They determined that individuals experienced in conducting internet searches had much higher developed frontal lobe or decision-making activity when they searched online than those who had less experience. However, when the groups were retested after a week's training on internet searches, the less experienced participants showed frontal lobe brain activity similar to those of the more experienced internet users. Because this gap was closed so quickly, the researchers determined that the difference in brain activity is not a result of a generational crisis. Instead, it is due to a lack of experience.

Herther [21] concluded that there is no research from neuroscience that would support ideas that digital natives are any better prepared to handle the digital medium. However, "they may certainly be more experienced, but the experience is something that can be overcome with training" (p. 17). Herther [21] stated, "There is absolutely no scientific basis for claiming that young people's brains have changed in recent times or that there is such a major difference between the brain at different ages" (p. 18). Younger learners might have more extensive experience using digital resources, but that does not mean that they are familiar or proficient with the digital resources used in the online courses.

METHODOLOGY

Research Questions

The researchers of this study were interested in determining if there is a difference between digital natives and digital immigrants in their preparation for functioning in online coursework. Additionally, the researchers wanted to know the impact, benefits, and challenges digital tools might present in the online learning environment.

These concerns led to three research questions:

RQ1: How do the perceptions of technology preparedness for online graduate course work compare between students under 40 years of age and students over 40 years of age?

RQ2: How do graduate students' self-assessment of their digital skills as expressed by the mean of the total survey compare to the means of the individual items within the survey?

RQ3: What are the differences in perceptions about technological skills for online learning of graduate students under 40 years of age and those over 40 years of age-related?

Sample

The study was conducted at a small, private liberal arts university in the southeast United States. After obtaining IRB approval, 365 students enrolled in five online Graduate Studies in Education programs (Education Leadership, Reading, Exceptional Student Education, Instructional Design, and Instructional Leadership) received an email invitation through their university email to complete an anonymous online survey about their perceptions related to their preparation for completing online coursework. The online survey was composed of four sections. The first section of the survey contained questions related to their demographic information. Students were asked to provide their age, program of study, and their general perceptions about their technology proficiency. Each of the other three sections was composed of 6 Likert style questions and two open-ended questions. For the close-ended responses, a 4-point Likert scale was used: 1- Disagree Strongly, 2- Disagree, 3- Agree, and 4- Agree Strongly.

DATA ANALYSIS

Qualitative Analysis

The response rate to the survey was about 16%. Sixty of the 365 recruited students completed the survey. Responses among each of the five programs were relatively evenly distributed, with 9 to 13 students responding from each program. The graduate students who responded ranged in age from 21 to 63 years of age. The average age of the respondents was 44.47 years of age.

The survey is divided into three sections: 1) demographic information and general perception of computer comfort, 2) computer skills needed for navigating course content, and 3) skills with digital software in addition to Microsoft Word. All sections contained six close-ended Likert response questions and two open-ended short response questions.

To obtain quantitative data, the 60 responses were divided into two groups; those students who were less than or equal to 40 years of age and those learners older than 40 years of age. These two groups were chosen based on the 1980 date Prensky identified as the beginning of the digital natives. Because of the distribution of the participants, the division also created similar size groups. The responses from the Likert scale questions were analyzed by calculating T scores to compare subgroups responses on the closed-end response questions.

Qualitative Analysis

A narrative inquiry was used to conduct the data analysis for the qualitative data open-ended question responses because this approach tends to be more representative of the real world. Data were analyzed to gather 'rich' data from the participants' words to support the quantitative findings [23] and through the analysis of these expressions the meaning and significance of the quantitative responses [24]. Leedy and Ormond [25] explained that "narrative researchers search for common themes, threads and tensions" (p.235) using either a positivist or interpretivist approach [26]. Burrell and Morgan [27] argued that the interpretivist approach is used to understand the "subjective experience of individuals," (p. 253) consequently, this study adopted an interpretivist approach to understanding the perceptions of the participants.

Axial and open coding methodologies were used to analyze and identify themes. Using open coding methodology, the researchers read through the qualitative responses several times to create "chunks" of data seeking to find the meaning that emerged from the data. The researchers used an inductive reasoning process to generate themes from the ideas and employed axial coding methodology to identify relationships among themes.

RESULTS

Demographic Information and General Perception of Computer Comfort

The study began by collecting participant's demographic information. The next two questions on the survey were general questions asking respondents to rate their comfort using computers and their comfort with their current computer skills. Both responses were scored on a scale of 1-4, with "1" being Extremely Uncomfortable and "4" being Extremely Comfortable (see Table 1). The total survey mean for each question was "3" indicating that the graduate students felt comfortable with both using a computer and with their current level of computer skills. The data were then disaggregated into the two subgroups those 40 years of age and younger and those 40 years of age. There was a significant difference between the two groups at the $p < .05$ level when participants were asked to evaluate their current computer skills. Although students over 40 years of age were comfortable with their skills, they were not as comfortable as those under 40. Consequently, older learners seemed to begin their graduate online course work with a slight disadvantage and with a higher discomfort level when compared to younger graduate learners.

Table 1: Comparison of Students' Perceptions of Computer Comfort Less than or Greater than 40 years of age

General Item	Overall Mean	≤40 yrs.	>40 yrs.	t	p
Comfort using a computer	3	3.579	3.285	1.16426	.24955
Comfort with computer skills	3	3.579	3.028	2.2513	.02885*

Note. Significance- * $p < .05$

The 30 qualitative responses provided more extensive information to support the quantitative data and identify students' concerns. The majority of these responses ($n=24$) indicated specific areas where graduate students felt they would have profited from additional online preparation before beginning their coursework while only six of these comments related to participants feeling well prepared for online course work. One student requested additional information about "anything related to the multiple ways to access the same information within the course Learning

Management System." Another student stated, "I struggle with final assignments because they often require me to submit work in a way I am not comfortable. Perhaps there could be a tutorial on how to complete the assignment."

Computer Skills Needed for Navigating Course Content

The next six questions in the survey examined students' confidence in accessing and using different components of the online course shell within the learning management system. Again a 1-4 Likert scale was used, with "1" being Strongly Disagree and "4" being Strongly Agree (see Table 2). The overall means for these items were between 3 (Agree) and 4 (Strongly Agree). Graduate students felt confident navigating their course, accessing graded work, completing assignments, searching the internet, using the online library, and identifying peer-reviewed sources. However, learners indicated the least amount of confidence related to using the online library. The disaggregated scores between the two age groups indicated that the item related to confidence using the online library was the only item in this group where there was a significant difference at the $p < .05$ level. Students over 40 years of age recorded a mean score between Disagree and Agree while younger learners recorded a mean score between Agree and Strongly Agree. This result indicates that older learners might need more support from instructors when using the online library.

Table 2: Comparison of Students' Perceptions of Course-Related Computer Skills (Less than or Greater than 40 years of age)

General Item	Overall Mean	≤40 yrs.	>40 yrs.	t	P
Confident navigating course components	3.4	3.526	3.421	0.67294	.504214
Confident accessing graded work	4	3.684	3.5	1.1612	.251305
Confident creating computer assignments	3.6	3.736	3.484	1.52518	.133917
Confident conducting Internet searches	3.64	3.763	3.588	0.88702	.379489
Confident using online library	3.1	3.368	2.882	2.23926	.029808*
Confident identifying peer-reviewed sources	3.2	3.368	3.147	1.04094	.303118

Note. Significance- * $p < .05$

Of the 14 comments in section 2, 12 of them requested additional support. One student indicated, "I could use some more help with digital resources because I really struggle in this area." Another stated, "I know next to nothing about digital resources and really wish I knew more. I am capable of accessing digital resources my instructor provides, but I am unaware of how to find them myself."

Skills with Digital Software in Addition to Microsoft Word

The last six questions in the survey examined students' perceptions about digital resources that students might be required to use in their online coursework that may not be part of the course learning management system. Students used the same 1-4 Likert scale with "1" Strongly Disagree, and "4" Strongly Agree (see Table 3) to rate their perceived confidence in using these items. The means for each question from the younger than 40 years age group were in the Agree range, while the means for the older than 40 age group were in the Disagree range. The difference between the two groups was significant for each of the six items. In four of the items, there was a significant difference at the $p < .01$ level, and in two items, there was a significant difference at the $p < .05$ level.

Generally, older students did not feel as confident using programs and software outside of Microsoft Word or the course learning management system.

Table 3: Comparison of Students' Perceptions of Digital Software (Less than or Greater than 40 years of age)

General Item	Overall Mean	<40 yrs.	>40 yrs.	t	P
Confident recording audio components	2.9	3.210	2.706	2.19108	.03333*
Confident creating video components	2.8	3.315	2.516	3.92624	.000281*
Confident using presentation software	2.9	3.526	2.529	5.47765	<.00001**
Confident editing digital resources	2.57	3.105	2.647	3.46899	.0011113**
Confident creating infographics	2.623	3.316	2.235	4.77003	.000018**
Confident organizing and analyzing data	2.679	3.157	2.412	3.20233	.002421 **

Note. Significance- **p<.01, * p<.05

The additional 14 qualitative comments from the survey came almost exclusively from those students older than 40 years of age. The theme of the comments related to a desire to know more about specific digital programs and resources. These comments ranged from general discomfort to wanting to know more about specific programs. One student stated, "I definitely could use some help with creating visually interesting components."

DISCUSSION

Research Questions

The variability resulting from the individual responses of this study indicated that making sweeping statements about the differences in graduate students' perceptions for online course work based upon age is too broad and not supported by the data. However, subgroup means and qualitative comments did evidence differences in group perceptions on various items.

The first research question asked: How do the perceptions of technology preparedness for online graduate course work compare between students under 40 years of age and students over 40 years of age? An analysis of the means of the individual survey items indicates that in many areas, older and younger learners seemed to perceive themselves to be equally well-prepared for online course work, even though older learners did not report feeling as confident about their computer skills. However, to develop a more accurate understanding of this phenomenon, it is crucial to examine what is meant by being well-prepared for online course work. The two additional sections of the survey attempted to examine this in more detail by asking about computer related skills and digital software. Both groups perceived themselves to be equally well-prepared in the area course-related computer skills except in the area of using the online college library.

The second research question asked: How do online graduate students' self-perception of their digital skills as expressed by the mean of the total survey compare to the means of the individual items within the survey? It became evident that graduate students' skills were not equally developed in all areas. In the area of digital software related to audio, video, editing, and presentation software, students 40 years old and younger viewed themselves as better prepared

than those learners older than 40 years of age. However, a causal relationship cannot be determined from this study. What is not evident is whether the differences in perception are due to age or to experience using technology.

Examining graduate students' responses helped the researchers to identify areas where older students might profit from additional support. Overall, both younger and older students perceived themselves to be confident with online learning. Students under 40 shared "I think of myself as a well-versed technology manipulator" while another stated "I was well prepared. Using Blackboard in a previous PD helped me know how to prepare for this online coursework." Similarly, students over 40 commented "I think I was pretty prepared for online classes" and "I have always been good with technology and computers and have kept up over the years." These perceptions indicate that previous experience and regular technology use are both considered important for preparedness for online learning.

The third research question asked: What are the differences in perceptions about their technological skills for online learning of graduate students under 40 years of age and those over 40 years of age-related? Difference in their perception of their technology skills for students under 40 and those over 40 focused on the use of manipulating digital resources, understanding various types of software, and navigating course related learning management system.

Manipulating of Digital Resources

Students under 40 perceived themselves to be knowledgeable and able to navigate or figure out the technology resources as one student stated "I think of myself as a well-versed technology manipulator before. I'm skilled." In contrast, students over 40 made comments such as "I know next to nothing about digital resources and really wish I knew more." And "I could use more help with digital resources because I struggled." This indicates that instructor support for use of digital resources and software might be beneficial.

Understanding Software

Similarly, when discussing knowledge of software use, students under 40 considered themselves knowledgeable and one student stated, "I have helped several people with computer issues, I believe that if they are going to take an online course, they should have to take a computer concepts class first." In contrast, a student over 40 stated "I don't know what either editing digital resources nor infographics mean. Seek help from those with more knowledge." While one student recommends a prerequisite computer class the other indicated that seeking help from peers may be more beneficial. In several areas including more knowledge in software use, navigating the online learning platform, and facilitating their work with the resources provided.

Navigating Learning Management Systems

Finally, in the area of platform use, students under 40 were not as challenged as those over 40. Results for those under 40 related more to being informed of what aspects of the platform were to be used rather than not having the knowledge. For example, one student said "I had no information on regarding LionShare. I was told to log into the portal, which I did, but no one said I would access classes through LionShare." In comparison, students over 40 made comments such as "A few times, in the courses that required the online class, I had trouble accessing the class." and "I will have to go watch some Khan Academy videos to learn the basics to get me started." It was interesting that

despite the varying perceptions of the knowledge of technology, resources, software, and platform use, one area that resulted in similarities was in the use of APA. Both groups did not feel prepared for applying APA to their course work with students in both groups stating, "I was better prepared for using APA." and "I wish I were better at APA style writing and that my computer had an APA formatting app."

RESULTS

Study Implications

The results of the study indicated that there is a difference in certain areas of online learning between those under and over 40. Both groups discussed the need for prerequisite knowledge when taking online courses. The differences among the groups were found in the knowledge needed for specific skills such as use of resources, software, and the course platform. There are indicators that the availability of supporting resources was not adequate. Students suggested that, if they had these resources, they would be able to perform their coursework more efficiently. These resources could be a potential catalyst for help all learners, but especially older learners to be better prepared for online learning. It makes sense that understanding resources and how to use them would possibly help with also understanding the software and platform use as resources in this area could be provided as a reference for the various components of coursework. Prensky [13] indicated that classroom teaching is continually changing because of the impact of technology and technological changes. He suggested in order for educators to succeed, classroom focus should not be continuously about changing technologies; instead, the focus should be on how to 'conceptualize learning in a new way' [13] (p. 2). Part of this conceptualization process should be the evaluation of what resources are needed for students to feel prepared to use technology for learning.

Limitations and Future Study

A variety of factors limit the ability to make generalizations of the findings from this study to other groups of students, locations, and programs. The sample in this study was limited to graduate students in a southeastern state. The characteristics, challenges, and abilities of graduate students might be significantly different from those of undergraduate students.

Additionally, the number of participants in our study was limited to 60 graduate students. Additional studies need to incorporate an expanded sample population to determine the extent to which these results can be generalized to other populations and settings. In this study, data about participants' perceptions were also only collected through a survey related to students' perceptions, and no attempt was made to quantify learning or verify. Additionally, only graduate students from education programs were included in the study. These findings might not be able to be generally to students at other levels or in other programs.

CONCLUSION

As course designers continue to develop online courses, it will be essential to extend this research and determine if there are different results based upon the participants' age, the program in which students are enrolled, and the type of activities used within the online course. It would be beneficial to investigate whether students' perception of their technological understanding, especially with the resources provided to support them, aligns with their proficiency in technology usage in their online coursework, their engagement, and the ability to complete the online coursework successfully.

References

1. National Center for Education Statistics. (2018). Distance learning. Fast Facts. <https://nces.ed.gov/fastfacts/display.asp?id=80>
2. Lederman, D. (2018, November). Online education ascends. <https://www.insidehighered.com/digital-learning/article/2018/11/07/new-data-online-enrollments-grow-and-share-overall-enrollment>
3. Kasasa, (2019). Boomers, gen x, gen y, and gen z. <https://www.kasasa.com/articles/generations/gen-x-gen-y-gen-z>
4. Orlando, J., & Attard, C. (2015). Digital natives come of age: The reality of today's early career teachers using mobile devices to teach mathematics. *Mathematics Education Research Journal*, 28, 107-121. doi:10.1007/s13394-015-0159-6
5. Kirkwood, A. & Price, L. (2014). Technology-enhanced learning and teaching in higher education: What is 'enhanced' and how do we know? A critical literature review. *Learning, Media and Technology*, 39(1), 6-36. doi:10.1080/17439884.2013.770404
6. Gillett-Swan, J. (2017). The challenges of online learning supporting and engaging the isolated learner. *Journal of Learning Design*, 10(1), 20-30.
7. Zhao, Y., Lei, J., Yan, B., Lai C., & Tan, H. S. (2005). What makes the difference? A practical analysis of research on the effectiveness of distance education. *Teachers College Record*, 107(8), 1836-1884.
8. Means, B. M., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2009). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies, U. S. Department of Education Office of Planning, Evaluation, and Policy Development. <https://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf>
9. Newman, D. & Dickinson, M. (2017). Preparing students for success in hybrid learning environments with academic resource centers. *New Directions for Teaching & Learning*, 2017(149), 79-88.
10. Zuvic-Butorac, M., Roncevic, N., Nemcanin, D., & Nebic, Z. (2011). Blended e-learning in higher education: Research on students' perspective. *Issues in Informing Science and Information Technology* 8: 413-415.
11. Roby, T., Ashe, S., Singh, N., & Clark, C. (2013). Shaping the online experience: How administrators can influence student and instructor perceptions through policy and practice. *The Internet and Higher Education*, 17, 29-37.
12. Melnick, J. A. (2014). The generational digital divide: Understanding adult learners' self-efficacy in online education. https://www.gvsu.edu/cms4/asset/777A03CA-E5D1-90B3-8FF97B7EA6E9ECB3/educational_technology_thesis_2.pdf
13. Prensky, M. (2001, October). Digital natives, digital immigrants, On the Horizon 9(5), 1-2. www.marcprensky.com/writing/Prensky%20%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf.
14. Bennett, S., Maton, K. & Kervin, L. (2008). The 'digital natives' debate: a critical review of the evidence. *British Journal of Educational Technology*, 10, 775-786.
15. Ransdell, S. (2010). Motivation, reasoning, and online activity among health science students. *Computers in Human Behavior*, 26, 1, 70-73.
16. Underwood, J. (2007) Rethinking the digital divide: impacts on student-tutor relationships. *European Journal of Education*, 42(2), 213-222.
17. Keengwe, J. & Anyanwu, L. (2007). Computer technology-infused learning enhancement. *Journal of Science Education and Technology*, 16(5), 387-393.
18. Bitter, G. G. & Legacy, J. M. (2006). Using technology in the classroom (Brief version). Allyn & Bacon.
19. Palfry, J. & Gasser, U. (2008). Born digital. Perseus Books Group.
20. Fernandez, A. & Goldberg, E. (2009). The sharpbrains guide to brain fitness: 18 interviews with scientists, practical advice, and product reviews, to keep your brain sharp. SharpBrains.

21. Herther, N. (2009, November/December). Digital natives and immigrants: What brain research tells us [pdf]. Online, 15-21. www.onlinemag.net.
22. Small, G. W., Moddy, T. D., Siddarth, P., & Bookheimer, S. Y. (2009, February). Your brain on Google: Patterns of cerebral activation during Internet searching, *American Journal of Geriatric Psychiatry*, 17(2), 116–126.
23. Creswell, J.W. (1998). *Qualitative Inquiry and Research Design--Choosing Among Five Traditions*. Sage Publications Inc.
24. Manen, M. (1990). *Researching lived experience*. The State University of New York, USA.
25. Leedy, P. & Ormrod, J. (2019). *Practical research: planning and design*. Pearson Education.
26. Yin, R. (1984). *Case Study Research: design and methods*. Sage Publications.
27. Burrell, G. & Morgan, G. (1979). *Sociological paradigms and organizational analysis*. Ashgate Publishing Company.