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ARTICLES

FROM THE PRESIDENT

As social scientists, we are committed to understanding and analyzing the world around us. Whether we serve as academics or administrators, we share the common goal to educate and advocate for an equitable distribution of resources with better opportunities for all. While a myriad of social dilemmas persists in our socially fluid communities, we become more grounded in scientific research. We test hypotheses and theories to propose solutions that would potentially improve the living standards of our society. And one of the most admirable aspects of what we do is the interest we take in understanding all forms of social problems. No matter how minuscule a problem appears to be at face value, rest assured that one of us will eagerly seek to explore it and align the research findings with the most devotedly uplifting solutions.

For that, I express my deepest sense of gratitude to all members of the Virginia Social Science Association (VSSA) and participants of the 96th-year conference and beyond for their effortless and ongoing contributions to service and research. My sincere acknowledgment goes to the editorial team, Dr. Ayana Conway (editor-in-chief), Dr. Beverly Colwell Adams, Dr. Judi Anne Caron Shepperd, and all peer reviewers for reviewing the manuscripts submitted to the Virginia Social Science Journal (VSSJ/Issue 56). They have done a formidable job. The journal is a product of their teamwork and tenacity to succeed.

Last but not least, I hope we continue to stand unified as we transition from the aftermath of the ravaging pandemic of COVID-19 to the global political turmoil, pertaining particularly to the war in Ukraine.

Sincerely,

Nadjhia Normil-Skakavac

Dr. Nadjhia Normil-Skakavac
President, Virginia Social Science Association
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Message from the Editors

The Virginia Social Science Association (VSSA), the Commonwealth's oldest association of academics, is pleased to bring you Volume 56 of the Virginia Social Science Journal (VSSJ). We, and the broader social science community, appreciate the expertise, time, and thoughtfulness that the editorial board members and referees bring to your role in the peer reviewer process. Your rigorous assessment of submitted manuscripts is invaluable, and your ongoing contribution to quality research inspires us. We thank the authors for working with the editors to refine their manuscripts. We thank you for reading the journal and invite all to help VSSJ attract high-quality manuscripts.

Further, if you would like to serve as a peer reviewer during the 2023-2024 period, please get in touch with Ayana Conway at aconway@vsu.edu. The manuscript deadline for Volume 57 is Sunday, September 10, for publication in April 2024. The link is below: https://www.virginiasocialscience.org/#/

Here's to striving to create and report new knowledge!

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Grounded Theory in Action: A Case Study of Educational History in Zimbabwe

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Grounded Theory in Action: A Case Study of Educational History in Zimbabwe

Abstract

This paper offers a case-study of the use of grounded methodology in a historical study on the role of education during Zimbabwean liberation war (1965-1980). It examines the strengths and limitations of grounded methodology in this context and develops a detailed approach for the use of grounded methodology in the collection, analysis, and compilation of the data to form a narrative. The methodology was employed to study the use of education as an ideological, political, and physical tool of war by both the Rhodesian Front government and the Zimbabwean African People's Union (ZAPU) and its military wing, the Zimbabwean Independence People's Army (ZIPRA). Overall, this paper highlights ways in which grounded theory can be used as a conceptual and analytic tool, and its advantages and limitations therein.

Keywords: grounded methodology, qualitative research, interview coding, grounded methods, ZAPU, research methodology, research design, comparative analysis, comparative and international education policy, grounded data, oral history

Introduction and Research Overview

Since its development in the late 1960s by sociologists Strauss and Glaser, grounded methodology has become one of the foremost approaches to qualitative inquiry (Glaser and Strauss, 1967). The methodology uses both an inductive and iterative process of framing research questions, analysis, and coding cycles to generate overarching narratives, categories and theories "grounded" or drawn from the collection of qualitative data. Despite the popularity of grounded methods as a research methodology, few articles in education have provided detailed case studies on the use of grounded theory from the conception through the analysis and conclusions of a research project. While articles in the physical sciences and more quantitative studies in psychology and sociology tend to give detailed accounts of the development and application of their research methodology, this "back-end" is typically far more opaque in studies in the humanities and social sciences, which tend to foreground their findings and not the processes by which they were generated or obtained. While there are several excellent works on theory and methodology across various disciplines, it is still a particularly useful exercise for students and researchers to be able to examine a post-research case study on the ways in which grounded methodology was used as a conceptual and analytic tool for a historical educational study, and the advantages and limitations of using grounded methodology therein. In tracing the development of my project from topic to conclusions, I hope to exemplify some of the ways in which grounded theory can be deployed and draw some conclusions about its strengths and limitations in this study to assist researchers in developing future studies.

The completed project was an educational history on the role of education during the Zimbabwean liberation war (1965-1980) as part of a Doctorate in Philosophy in Comparative and International Education Policy at Oxford University. The research aimed to understand how education was used as an ideological, political, and physical tool of war by both the Rhodesian Front government and the Zimbabwean African People's Union (ZAPU) and its military wing, the Zimbabwean Independence People's

Army (ZIPRA). The study explored the meanings and uses assigned to education and schools, including their use as building blocks for a future state, as a place for military recruitment, and as locations from which military interventions were staged. Additionally, the study examined how schools were used as a place for political and ideological indoctrination, particularly in light of the support from the Soviet Union and allied countries for ZAPU during the Cold War. The interviews and archival data collection took place between May 2017 and June 2019, with two rounds of interviews carried out in June 2017 and December 2018 in Zimbabwe, and subsequent Facebook surveys and analysis of archival data in between. The focus of this paper is to examine the role of grounded methods in the conceptualization, interviews, and analysis of the research project, and how it contributed to the understanding of the role of education during the liberation war.

Defining Grounded Methodology

Grounded methodology is an inductive, comparative, and interactive method in which researchers collect and approach data with as few overarching preconceptions as possible. The process is naturally comparative and iterative; at each stage, the researcher compares emerging concepts to the data and supporting data to ensure alignment, with deference given to the "raw data" from which new ideas and concepts emerge. The method is particularly well-suited for phenomenological qualitative studies in which interviews are the primary source of data, though it is not without challenges. The most significant challenge is, simultaneously, one of the foremost assets of the approach - when used to design a research study, for example, based on interviews, one must be open to ongoing "course correction" resulting from the concurrent analysis of the interviews in relation to the research question, interview questions, and any other supporting or comparative documentation during the ongoing research process. The process can be likened to an adaptive learning system in which categories, research questions, and theories change or become refined in response to emerging data. As will be demonstrated within this case

study, a research question might shift over time based on divergent interview data, creating a cascade of shifts in interview questions and categories of analysis. Ultimately, to successfully conduct a grounded methods study, the researcher must be willing to follow where the data leads, which is not without its discomforts and challenges. Before delving into both, in the interest of due diligence to the literature surrounding the methodology, I next highlight the epistemological and theoretical bases for my study's approach within the context of the broader field of grounded methodology.

As with any ground-breaking methodological approach, the inevitability of variations based on epistemological and theoretical deviations necessitate a brief mention of the "branch" of grounded theory within which this educational study is situated. Since its conceptualization, three broadly defined dominant schools of grounded theory have emerged: Strauss' and Glaser's positivist approach, Strauss' and Corbin's postpositivist approach, and Charmaz's constructivist approach. Each approach emphasizes different aspects of the methodology and has its own unique advantages and challenges.

After developing the methodology, Glaser's and Strauss' approaches to grounded theory diverged. Glaser approached data through a positivist lens, relatively discounting the relationship between the researcher and the data, and idealizing the replicability of results and observable realities that "make themselves apparent" once preconceptions are removed. He argued that grounded methodology is a "theory-generating method" rather than a "full conceptual description" (Hallberg, 2009), meaning that once new theories have emerged from the data, they can be decontextualized and applied to similar cases with the expectation of replicability. Glaser's school is therefore labeled as "positivist" or "objectivist" (Belgrave & Charmaz, 2012, 349). On the other hand, Strauss and Corbin (1990) argue that "doing analysis is, in fact, making interpretations" (Strauss & Corbin, 1990, 59), implicating the researcher and participants in a phenomenological approach in which it is assumed that reality is constructed through interpretation and meaning making, through which reality is filtered. This approach still emphasizes the importance of coding and data collection, which is derived from its positivist origins prior to Strauss and

Glaser's divergent epistemological framings. Belgrave and Charmaz refer to Strauss and Corbin's approach as postpositivist, since it emphasizes "research as conceptualizing empirical findings and generating new knowledge" (*ibid*, 349).

The most recent branch, refined by Charmaz, is constructivist and notably expands the significant role of the researcher and of interpretive meaning-making in the order and organization of reality. It focuses on constructions that "not only locate data in time, place, culture, and context but also reflect our social, epistemological, and research locations" (*ibid*).

By nature of the research project highlighted in this paper, which centers on interviews with former combatants and politicized archival data, as well as the goal to uncover the history of education during a particular period, this project adopts the constructivist approach of Charmaz in the analysis of the experiences of the war veterans and the contextualization of the political propaganda of the period, while simultaneously adopting stringent coding and triangulation methods which harken to Strauss and Corbin's postpositivist stance as the project aimed to uncover historical moments within the period. Both aspects, in relation to the research question, are explored below.

The Role of Grounded Theory in the Development of the Research Question

Since research questions presuppose the methodologies used to investigate them, the grounded methodology was employed after the interview process began when the emerging narratives no longer fit within the narrowly constructed research question. The initial research question of "how schools in Matabeleland region of the country were affected by the liberation struggle" was formed with the hypothesis that the liberation struggle significantly affected the quality and access to formal education, particularly for rural students. However, over the course of interviews with ZAPU veterans whom I asked about schools they may have come across during the war, their own educational histories, including their Marxist and Socialist educations in ZAPU camps and their experiences studying abroad, revealed the limited scope with which I had approached the question of the significance of education during the war.

“As grounded theorists cannot identify the most significant processes beforehand”, I successively reframed the research question based on “the participants' concerns and experiences” (*ibid*, 348). The divergent responses to my initial research question highlighted an erroneous assumption of the impact of war on education; this concurrent data collection and analysis necessitated a shift in the project's scope. That research question then became, "What was the role of education in the Zimbabwean War of Independence from 1965-1980?", within which the interview narratives and archival research elucidated the definitions of education and its employ during the period.

Under the latter broader research question, interviews and archival data highlighted two overarching dynamics or roles of education during the war, which in turn highlighted two interactive aspects or branches of the grounded methodological approach to the question of the role of education during the war—interpretive/ constructivist and descriptive/postpositivist.

The first approach, the more interpretive/constructivist branch of inquiry, explored the contested nature of the purposes of education, defined by differing ideologies in the context of struggles for power. This approach was based on a more phenomenological or constructivist assumptions of grounded methods, as the analysis explored the different ways in which education and its purposes were conceived by different groups interviewed - for example, ZAPU veterans discussed their views on education in relation to their visions for national development and a future nation-state, and as a reflection of capabilities as educated fighters who formed “a government in exile” which would come into power after independence. The answers to the interpretive categories established the themes within which diverse viewpoints were shared; for example, the theme of the impact of the religious schools and doctrines taught therein as an influence in their decision to go to war was a broad category that emerged from interviewees speaking to the relationships between their different religious identities and their political goals.

The second approach, which was more descriptive or post-positivist to use the terms by Belgrave and Charmaz (2012) aimed to highlight the policies surrounding education, significant dates and events and the physical uses of the schools in the political struggle for control of the state. It therefore uncovered more historical data, highlighting the practical ways in which education was historically used by different groups through policies and practices - for example, some schools were used as military bases by the Rhodesian Front, while ZAPU both forcibly recruited from schools in Rhodesia, and built schools in refugee and military camps in Botswana, where the majority of military training bases were held. The latter category forms the foundation of the historical project, as the oral histories are indispensable in filling in the gaps in the written record of the events that took place during and after the war of independence. Through the lens of grounded theory, the descriptive themes that emerged from each interview would be compared to the others and to the archival documents to establish the degree to which informants agreed upon the details of certain events.

While the interpretive/constructivist and postpositivist/descriptive categories are theoretically distinct, in carrying out the analysis of the interviews using the grounded approach, they can oftentimes be much more difficult to distinguish. One might argue that all oral historiography is interpretive—that people are inherently biased in recalling events that are personally meaningful, which means that by the very act of remembering, an interviewee has superimposed personal meaning onto a seemingly objective sequence of events. While there has been research on the unreliability of general memories, other research on significant periods in the lives of people point to the opposite - that details of periods of import in the lives of individuals are remembered accurately—with emotional intensity and personal participation in the event correlated with higher degrees of accurate memory recall (See Bernsten & Thomsen, 2005). Studies on memories recalled with higher degrees of accuracy than every day memories are referred to in the literature as *flashbulb* memories, while memories that are considered permanent are referred to as “permanent memories” or more colloquially as “permacore” memories; these

memories are believed by neuroscientists to be stored in the hippocampus and neocortex regions of the brain (See Bontempi & Frankland, 2005). In my study, some interviewees recounted vivid scenes of significant moments during the war such as the dates and times they were bombed, or the day of their release from prison. I relied heavily on the oral narratives of my interviewees and attempted, where possible, to corroborate these accounts with other sources, whether written or oral as part of the iterative and comparative approach of grounded methodology. Given the broad gaps in writings on the period, however, I frequently verified information received from one interview with others in subsequent interviews. This was, for example, the case of how I came to know about ZAPU's publication, *The Ideological Concept,* which was not widely distributed or cited within the existing literature but was mentioned by a number of interviewees and led me to the Harvard University library archive which happens to contain a copy which was donated by the late historian Terence Ranger (ZAPU, 1970).

In answering descriptive questions, interviewees often give their interpretive opinions on the events that they recount, which means that the two categories, while conceptually distinct, are often inseparable in real-time interviews, especially given the fact that maintaining the flow of conversation is vital to building trust and encouraging associative memory recall. For example, the questions I ask in the beginning of the interviews were purposefully broad, and I encouraged the interviewees to speak for as long as necessary with minimal interruptions before asking more narrow follow-up questions. The result of this interview technique is that their narratives often weave between and combine the description and the interpretation of the past.

Order of Research and Interview Questions

The interviews and archival data collection took place between May 2017 and June 2019, with two rounds of interviews carried out in June 2017 and December 2018 in Zimbabwe, and subsequent Facebook surveys and archival data in between. In 2017, after a brief review of existing literature, the research project began with interviews of a senior researcher who had written on the period and then with war

veterans who had fought for Zimbabwean independence. The choice to begin with interviews is in keeping with my epistemological approach, which I credit to my Zimbabwean/African heritage, that knowledge resides foremostly within people and that documents, while unmatched in longevity and replicability and the ability to capture specific moments in time, are the narrowly captured outpourings of the knowledge of said people. I also recognize that memories and interpretations of events might shift over time, which is why the comparative and iterative approach of grounded methods, alongside the triangulation of events, when possible, is important. This approach of beginning with exploratory interviews is well-suited to the grounded methodological approach in that interviewing offers an opportunity for real-time simultaneous inquiry and analysis of emerging data and allows for shifts in questions and opportunities for deep exploration, both of which are predicated on the skill-level of the interviewer who guides the interview.

Not only did the interviews lead to relevant archival documentation, but they also became the anchor from which the research questions and contextualization of the archival documents built the overarching narrative. In addition to the interviews, primary and secondary written sources were also collected and analyzed through a systematic grounded methodological approach. While the focus of this article is on the interviews, it is worth noting that any and all materials that even tangentially related to formal education (schools), political education, or propaganda, referred to as common knowledge or media education, were collected. The data collected included:

- 41 interviews with ZAPU veterans averaging between 1 and 2 hours each.
- Rhodesian Government Annual Education Reports from 1941- 1979
- ZAPU publications, including *The Zimbabwe Review* (1964-1976)
- High school yearbooks from three schools of different races, ranging from 1970-1979
- Surveys with Rhodesian Front soldiers on a Rhodesian Facebook group, “Rhodesia Military”

- Surveys with former Rhodesian students on a Rhodesian School Facebook group, “Rhodesian Schools”.
- In-person discussions with Rhodesian Front war veterans at their clubhouse in Bulawayo.

It was only after the data was collected, transcribed and a preliminary documentary analysis was carried out that the themes and arguments that concluded the project were pieced together.

Researcher Positionality & Grounded Methodology

One of the challenges inherent in grounded methodology is that of scope— for there are few limitations placed on the amount of data necessary to develop and answer a research question, with Charmaz advising the collection of “a substantial amount and depth of data [which might] offset the negative effects of several misleading accounts and thus reduces the likelihood of the researcher making misleading claims or writing a superficial analysis” (Belgrave & Charmaz, 2012, 351).

For the educational history project, the collection and analysis of data was limited by both contextual and personal factors. Contextually, the project was constrained by temporal, financial, and material considerations, as well as the availability of interviewees. I was also acutely aware that my own interests and biases played a role in guiding the research process. This speaks to the phenomenological nature of grounded qualitative research, and the relationship between the researcher and the data. While the pro-positivist strains of grounded researchers such as Glasser might warn against the outright creation of emerging themes based on researcher interest, the more constructivist researchers argue that even through a quantitative-leaning lens, researchers are constantly fitting observable “facts” into meaningful patterns, a process in which personal interpretation is inevitable. Throughout the progression of the project, I was cognizant that the line between personal interest and emerging data was somewhat blurred; how might one distinguish between what one observes as emerging from the data and the epistemological, ontological and cosmological worldviews which have primed the researcher to become sensitive to said observed, emerging data? At best, the role of incorporating the archival research and

documentation was that of triangulation, which was not only important for a historical study such as this to establish historical dates and happenings, but also as a means of comparing and contrasting the data. It is for this precise reason that all grounded methodologies incorporate contrast and comparison within the iterative process of analysis in order to offer a degree of safeguard, though not complete, against excessive bias and cherry-picking of data in the development of emergent theories.

While one might debate the degree to which one's interests shape the iterative process, in the case of my research, there were more stark personal connections to the research question, as Charmaz (Sage, 349) notes, "data reflects researchers' and research participants' mutual constructions, and…the researcher enters, however incompletely, the participant's world and is affected by it." I grew up around the world of the participants, I am Zimbabwean, and I chose the location from which I sought interviews and archival data because I was raised in Bulawayo and it was there that I would have likely access to interviewees. As a Coloured or mixed-raced woman from the area who studies and lives abroad, it was to my advantage that many interviewees considered me both an outsider and a local. The majority of the interviewees knew my grandfather, or at least his bus company, "Super Godlhwayo," which was the only company that connected rural areas to Bulawayo for many years. As Cohen and Manion note, one of the biases inherent in oral histories, including life-histories, stems from the nature of the relationship between the researcher and interviewee. I believe that I was better able to connect with my interviewees because they both trusted me as a local but also felt safe confiding in me because I live abroad.

I believe that my family’s multiracial background, being descended from both native African, East Asian and European settlers, was one of the reasons for my interest in veteran narratives. Some of my family members were forcibly conscripted and served in the Rhodesian Forces while other family members served as guerrilla fighters—both sides rarely mention the war and refused to be interviewed or even tell me about their experiences. The only war story a senior relative related to me was about how he and other Coloured RF soldiers would meet their friends and relatives who had joined ZAPU to play

soccer, “in the bush”, highlighting the significance the state conscription and threatened incarceration for as reasons for their defense of the white-supremacist state. The absence of their own stories piqued my curiosity to learn more about this particular period of my country’s history.

Finally, I would be remiss not to mention or at least place my interest in the relationship between education and conflict within my own background. Education was a site of personal conflict for me growing up in Zimbabwe. After attending a government primary school which was multiracial and socioeconomically diverse, I attended a private high school which was predominantly White, wealthy, and racially stratified. As the only Coloured girl in the top-ranked “first class,” I experienced racial prejudice from some of my White peers and a few of my teachers. I also became acutely aware of the difference in curriculum between my two schools; my government school curriculum centered African history, whereas the private school not only focused on European history, since we were to write the Cambridge examination, but any coursework related to “Africa” or “Black” topics, such as African language courses, were bemoaned by my classmates as “useless.” It was during this high school experience that I began to question the neutrality of schooling, though it took many years for me to intellectually analyze and articulate the unease I had felt in that school. While an undergraduate at a college in the US, I studied African Studies and Social Studies, and became more aware of the history of education in Zimbabwe. When I began this research project, I was therefore already aware of historical racial stratification in Zimbabwe as well as the epistemological biases inherent in education systems in general. All of these experiences, both academic and personal, stimulated my interest in understanding the complex relationships among education, race, and politics during the war and undoubtedly shaped my research questions and interpretations of the data.

Participant Selection & Ethical Considerations

While outside the purview of this paper, I briefly touch upon the fact that my personal relationship to the interviewees was critical to carry out the research in part owing to the fact that the liberation

movement party which I studied, ZAPU, lost the elections to a rival independence movement in 1980 led by Robert Mugabe. Just three years after the election, Robert Mugabe oversaw a campaign led by a North Korean-trained brigade of the Zimbabwean army that decimated the southern Matabeleland and Midlands regions from which ZAPU fighters predominantly came. The special forces killed thousands and tortured many more in a campaign to destroy ZAPU and their communities. Each of the interviews had a narrative to tell of how they survived what they argue was an attempted genocide and had lists of names of many other friends and colleagues who were not as lucky. Because Mugabe was—and his party remains—in power at the time of the interviews, the snowball method of recruitment was used for all interviews, beginning with one contact shared with me by a family friend. Owing to the politically and personally sensitive nature of questions for the veterans, I only interviewed individuals recommended to me by previous interviewees. As an additional safety precaution all interviews were conducted in the homes of individuals or in discreet but public places such as open-air restaurants during quiet hours.

I also had to consider how to preserve the privacy, as well as anonymity and confidentiality of my interviewees, as well as, to the best of my ability, being transparent about my study. I used what anthropologist Kovats-Bernat refers to as "localized ethics" as a framework. He argues that instead of guiding "fieldwork with hegemonic assumptions about uneven power relationships between ethnographer [interviewer in my case] and informants, [he] relied on the good advice and recommendations of the local population in deciding what conversations (and silences) were acceptable" (Kovats-Bernat, 2002, 24). I believe that my use of the snowball method to sample interviewees and my familiarity with the area were useful in this regard. I only published the names of interviewees from whom I explicitly requested consent after writing a draft of this work. Data protection was also a significant concern to ensure that their interviews remained safe, which simultaneously afforded me the opportunity to receive feedback from the interviews as part of the grounded approach. Linguistically, all interviews were carried out in English as it is the lingua franca of Zimbabwe, however, isiNdebele, the predominant

African language spoken in the region, also featured prominently in many interviews. While I am proficient in isiNdebele, I am not fluent and there were several instances in which interviewees would speak isiNdebele or would pause to translate a phrase from isiNdebele to English and explain its different symbolic meanings and resonances not captured by the English translation. Recent studies on implicit bias have shown the remarkable effects of shifting implicit cultural associations/biases in bilingual speakers depending on the language they are speaking (See Ogunnaike et. Al, 2010; Danziger & Ward, 2010). I do not mention this to argue that interviews in isiNdebele might have elicited stronger racial or ethnic biases, but rather to acknowledge the significant fact that linguistic context of English may have influenced the content of these interviews given the phenomenological or interpretative approach of the research.

Interviews

Each interview was recorded, and began with introductions, after which I presented a brief summary of my research aims along with the participant form and prompted a verbal confirmation of acknowledgment of rights. I chose a verbal, rather than a written confirmation of rights primarily for the safety of the interviewees, in order that their participation would not be implicated by their signatures. Additionally, I was aware that the interviewees may have been more reluctant to speak openly with me if they had signed a document. In the Zimbabwean context, especially given this politically sensitive history, documents are often viewed with suspicion—as legally binding agreements rather than as positive, legal protections. I wanted to be sure that the interviewees did not conflate signing the interview form with feeling bound to answering all of my questions.

The length of interviews with individuals ranged from between 15 minutes to 2 hours, though the majority of the interviews lasted between 1.5 to 2 hours, and two group interviews lasted 3 hours each. In keeping with the grounded methodology, the interviews were shaped by a basic outline of questions to guide the interview but I was careful not to limit the interview to the pre-prepared questions, or even to the order in which I had written the questions, as this may have impeded the flow of conversation and

inhibited associative memory recall for the interviewees. To aid in the grounded methodological nature of the interviews, the interview questions began with open-ended questions in order not to prime the interviewees, they "sufficiently general to cover a wide range of experiences and narrow enough to elicit and explore the participant's specific experience" (See Belgrave & Charmaz, 2015, 351).

Through the iterative process of grounded methodology, the simultaneous analysis of interviews through memo alongside other data collection and interviews meant that I was able to conduct a second round of interviews with individuals whose narratives most matched the emerging themes of the ongoing research project.

While the full interview guide can be found in the appendix, the interview questions broadly fell into six categories, listed below:

1. Demographic questions including the age, education and professional history of each interviewee.

2. For soldiers, reasons for joining the armed struggle or Rhodesian defense forces, recruitment history, rank, and area of expertise during the war.

3. Educational experiences during and after the liberation war, including personal stories and knowledge of the effects of the war on the formal education system such as the names of schools or individuals affected by the war. Interviewee views on education including juxtaposing the Rhodesian to the post-independence government educational provisions.

4. Informal or political educational experiences during the War of Liberation, including political education in the ZIPRA training camps, prison education of combatants, and studying abroad on scholarships provided by the Soviet Union and other countries.

5. Personal opinions of interviewees on the overall effectiveness of the Liberation War and their imagined ideal state.

6. Personal ideological and religious convictions during and after the war including religious affiliation and opinions of ZAPU's ideology.

A Brief Overview of Memo Writing and Coding in the Grounded Approach

One of the most challenging aspects of a grounded approach is in managing the concurrent data and analysis as part of the iterative and comparative process, particularly if a large amount of data is being collected. The approach I used, which Charmaz considers a "crucial intermediate step" both during the collection and analysis of data was the documentation of the project process, emerging ideas, conflicting data or themes or personal interests through "analytic memos," which consisted of a word document in which I wrote down questions that seemed most pressing to me based on the interviews, including future lines of inquiry. I also used post-interview voice notes- which I later transcribed, in which I contextualized the interview and the salient aspects which struck me personally and which related to the formation of the ongoing research project. These notes were indispensable for tracing the shifts in narrative and the emerging themes. Charmaz notes that, "memo writing prompts are typically used to raise codes to tentative conceptual categories. Through memo writing, grounded theorists take these categories apart analytically and, therefore, 'fracture' the data. We define the properties of each category; specify the conditions when the category develops, is maintained, and changes; as well as delineate its consequences and relationships with other categories" (*ibid*).

As memos "join data with the researcher's original interpretations of them" (*ibid*), the memos were also used throughout the coding process. While Belgrave & Charmaz recommend "reworking memos, which can be lose writings, ideas, interpretations, and summaries," I chose to use the memos as a reference, creating notes in a new document that aided in turning the notes into a narrative to which I could refer to expand upon as new data emerged.

The Four Phases of Coding Interviews

The memos were even more indispensable during the iterative coding process; just as the interviews and questions were iterative, the coding process happened in four stages after the entirety of the interviews were transcribed. While reading the interviews, I tracked, through memos what surprised, intrigued, and disturbed me, or felt incongruent with the internal narrative that had emerged about the period and the individuals involved based on my research and the existing literature (See Anzul et al., 2003). It was only after conducting both sets of interviews, over a year apart, that I began the process of coding. I coded the transcripts using Dedoose, an electronic coding software that allows for multiple layers of coding and unlimited groupings and configurations of themes. With over 400 pages of single-spaced transcripts to code, before beginning my interview analysis, I carefully researched and selected methods of coding which would allow for a grounded approach of organically drawing out themes from the data. The types of coding chosen were drawn from a well-regarded textbook on coding by Saldaña,, (Saldaña,2015) from which I chose three out of 32 well-described methods of coding.

Saldaña, distinguishes between descriptive “encoding,” in which the researcher chooses how to label information and interpretive “decoding,” in which the researcher reflects on the meaning of the information. The transcripts were first encoded using attributive coding, assigning individual attributes to interviewees: including name, age, education level, gender, when they joined the struggle, and rank and specialty within the army. The software allowed me to treat these “attributes” of the individuals as dependent variables in relation to others in later analysis. After coding, for example, with a few clicks, I was able to select the transcriptions of all individuals who had gone to the war after 1975, and then within that subset, compare their answers to questions about political education to understand how their political education might differ from that of the pre-1975 recruits. My own experience with the usefulness of using attribute coding is in agreement with Rubin and Rubin’s assertion that coding by attributes can help uncover possible hierarchical relationships, chronologies, and differing perspectives which might otherwise have gone unnoticed (Rubin & Rubin, 2011).

Given the broad number of questions I hoped my interviewees could answer, subsequent coding was more specialized. I chose a series of coding methods, beginning with "In Vivo" coding, followed by a second cycle of coding methods which organized the first cycle codes into broader themes. "In Vivo" coding, used extensively in ethnographies as a grounded method, is a name given to a method which begins by creating "verbatim" codes from the actual words or phrases individuals use in their interviews (*ibid*) In the first cycle of analysis, I created hundreds of codes as summaries of individual responses. For example, in an interview in which I had asked the interviewee why he had joined the war, he told me a story about how badly he was treated at his place of employment and how his employer threw his wages at him each payday. I coded the answer verbatim as "employer threw money, like I was nothing." In another interview, an interviewee recounted how his teacher had exposed him to politics, I coded, "Teacher Ncube politicized me." "In Vivo" coding ensured that while there was still an interpretive aspect or bias inevitable in choosing which information to code, the codes were at the very least capturing the "emotional" and "interpretive" aspects of the answers and were true to the voices of interviewees. In Vivo coding, for this reason, is part of the cannon of methods used for grounded theory studies.

After "In Vivo" coding of all of the interviews, I used a "second cycle" coding methods in which the very detailed passages of transcripts and codes were organized into broader themes based on various research questions. Developing the themes was part of the decoding process, the outcome of which required greater analytic reflection. (Saldaña, 2015, 14). I noted all of the questions my thesis was attempting to answer and organized the "In Vivo" codes into broader categories based on these questions. The two examples of initial codes, "employer threw money, like I was nothing" and "Mr. Ncube politicized me" were further coded under multiple categories. Both examples were coded under the broad theme of "reasons for going to the war." The answer referring to Mr. Ncube was also relevant to the theme of "political activities of Rhodesian teachers" and was coded under that theme as well. Coding in vivo

excerpts under multiple broader categories highlighted interactions among the categories and questions and allowed for easier cross-referencing between narratives.

In the second cycle of value coding, I organized these value-laden statements around common themes and categories such as “belief in Christianity,” “ideal education,” and “notions of success.” However, Augusto Boal’'s “social change theory” argues that individuals rarely form strong values around “abstract concepts” such as religion (See Boal, 2013). The values they form are more often based on interactions with other people, material objects, and contexts which serve as a personal “proxy” and come to symbolize these abstract concepts. While wholesale acceptance of Boal's proposition would raise a number of epistemological questions which are beyond the scope of this thesis, suffice it to say that his theory highlights important issues for the study of individual values. In my coding, I was wary of ascribing broad ideological themes without analyzing interviews for phrases and symbols which might point to, or best encapsulate interviewee beliefs, values, and attitudes better than abstract categories.

Concurrently through the first and secondary coding cycles, I conducted a “third coding cycle” category mentioned by Saldaña,, that is, values coding. Saldaña, described a value as “the importance we attribute to oneself, another person, thing, or idea,” an attitude as, “the way we think and feel about ourselves, another person, thing, or idea” and beliefs as “part of a system that includes our values and attitudes, plus our personal knowledge, experiences, opinions, prejudices, morals, and other interpretive perceptions of the social world” (Saldaña, 2015, 110). Given that a major question this research attempted to explore is the way in which individual veterans reconciled various political and religious ideologies to which they were exposed, I paid attention to interviewee phrasing which included insights into their value systems. I coded phrases that included or began with “I felt,” “I believed,” “It's important,” and a number of others highlighted by Saldaña, (*ibid, 113).*

The fourth phase of coding was manual. Having separated hundreds of the In Vivo codes under broader themes, I printed out the separate themes and their corresponding excerpts, cut each of the

excepts and further grouped them under the themes. For example, I took the “reasons for going to war” excerpts and grouped them into multiple categories, including “experienced or witnessed unfair racial treatment and sought to rectify the system,” “was forcefully recruited and decided to stay,” “was politicized by teachers to join the war,” “was a refugee and in Zambia decided to join the struggle,” and “was unable to get a job and decided to join the struggle.” Having made these groupings, I was able to manually move the pieces of paper around in order to create a coherent narrative.

Manually coding the excerpts offered the flexibility of moving certain pieces of evidence around and allowed for a more visual organization of the documents. Like pieces of a puzzle, I could begin to visualize how different narratives were related and began to infer correlations and causal relationships within the data. After completion of this final coding step, I was ready to formally compare and contextualize parts of the oral narratives with the written primary sources which were concurrently coded using a similar iterative coding process.

Comparing and contextualizing the data into a unified narrative was one of the more challenging aspects of the project. This required not only conjuring broader categories induced from the data, but as a researcher with a significant amount of data, I had to choose the strength of the "magnification" of the individual narratives in relation to broader themes I was attempting to address. For this particular project, I chose to address the broader themes of the role of education in the first three chapters of my dissertation, and only highlighted the individual narratives in the discussion of the relationships among the educational and religious experiences of veterans and their personal view of the state. To avoid the ethically questionable practice of retrieving significant personal narratives that are utilized only in service of broader questions, to honor the interviewees, in future studies I aim to acknowledge the individual narratives through a series of articles. I plan to once again turn to grounded methods to conduct a systematic review of the interview transcripts, memos, and supporting archival documentation.

Conclusion

Overall, the grounded theory approach offered an analytical framework within which the qualitative study of the ways in which education was employed as an ideological, political, and physical tool of war by both the Rhodesian Front government and the Zimbabwean African People's Union (ZAPU) and its military wing, the Zimbabwean Independence People's Army (ZIPRA). The challenges of this grounded theory approach included delineating the parameters of the research question, concurrent and reflexive analysis and formation of the research questions and methods as well as the epistemological questions of the relationship between the researcher and the data. I argue that this particular study demonstrated that grounded methodology, including this approach to generating and refining research questions, categories of research analysis and coding of interviews, can be a valuable tool for complex qualitative studies.

Appendix A: Interview Guide: Interview Question Guide for First Round of Interviewing

- Please state your name and tell me a little bit about yourself, including where you were born, your education level, and your profession.
- What led you to fight in the liberation war?
- Could you tell me about the schools during this period?
- Were there a lot of schools and what were people's attitudes towards education?
- During your time fighting, did you come across any schools?
- What kind were they?
- What was the relationship between these schools and the government and guerrilla forces?
- Were any of these schools used as sites for recruitment?
- Were schools attacked or did they serve as places of safe haven?
- Rhodesian government reports state that schools were attacked and closed by ZANLA and ZIPRA forces. Would you say that this is an accurate account?
- Are there any specific schools that you can think of?
- When you joined ZIPRA, what were people being taught about the history of the country?
- What was the education like inside ZIPRA campus and how did it spill into the communities?
- What education did the pro-independence movement provide during the struggle?
- Before the struggle, what was the education like for Africans and White people in the region? How did it change during the struggle, if at all?
- Have you known any schools, teachers, or students that have been affected in the last 15 years by the violence?
- What do you think about the future of the country?
- Is there something you wish to highlight or expand on that I haven’t asked about?

References

Berntsen, D., & Thomsen, D. K. (2005). Personal memories for remote historical events: Accuracy and clarity of flashbulb memories related to World War II. Journal of Experimental Psychology: General, 134(2), 242.

Charmaz, K., & Belgrave, L. (2012). Qualitative interviewing and grounded theory analysis. In The SAGE handbook of interview research: The complexity of the craft (pp. 347-365).

Cohen, L., Manion, L., & Morrison, K. (2002). Research methods in education. Routledge.

Corbin, J., & Strauss, A. (2014). Basics of qualitative research: Techniques and procedures for developing grounded theory. Sage publications.

Danziger, S., & Ward, R. (2010). Language changes implicit associations between ethnic groups and evaluation in bilinguals. Psychological Science, 21(6), 799.

Frederikse, J. (1983). None but ourselves: Masses vs. media in the making of Zimbabwe. Heinemann.

Frankland, P. W., & Bontempi, B. (2005). The organization of recent and remote memories. Nature reviews neuroscience, 6(2), 119-130.

Glaser, B. G., & Strauss, A. L. (1967). The Discovery of Grounded Theory: Strategies for Qualitative Research. New York: Aldine De Gruyter.

Glaser, B. G., & Strauss, A. L. (2017). The discovery of grounded theory: Strategies for qualitative research. Routledge.

Hallberg, L. R. (2006). The "core category" of grounded theory: Making constant comparisons. International Journal of Qualitative Studies on Health and Well-being, 1(3), 141-148.

Anzul, M., Ely, M., Freidman, T., Garner, D., & McCormack-Steinmetz, A. (2003). Doing qualitative research: Circles within circles. Routledge.

Issuing body Zimbabwe African People's Union, Zimbabwe African People's Union (ZAPU): Ideological Concept (Lusaka: Zimbabwe African People's Union (ZAPU), 1970).

Kovats-Bernat, J. C. (2002). Negotiating dangerous fields: Pragmatic strategies for fieldwork amid violence and terror. American Anthropologist, 104(1), 208-222.

Ogunnaike, O., Dunham, Y., & Banaji, M. R. (2010). The language of implicit preferences. Journal of Experimental Social Psychology, 46(6), 999-1003.

Rubin, H. J., & Rubin, I. S. (2011). Qualitative interviewing: The art of hearing data. Sage.

Saldaña, J. (2021). The coding manual for qualitative researchers. Sage.

Wertz, R. J. (2014). Johnny Saldaña. The coding manual for qualitative researchers. Journal of Communications Media Studies, 6(1), 128-130.

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Outdoor Participation and Spending Trends in Virginia: How Much is Too Much?

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Outdoor Participation and Spending Trends in Virginia: How Much is too Much?

Abstract

The rate of participation in outdoor recreation activities has increased exponentially over the past 15 years, with the economic impact surpassing that of many other industries. This trend is true in Virginia where outdoor recreation participation and tourism has seen significant growth. The purpose of this study was to examine: 1) the rate of participation in specific outdoor activities; 2) spending trends on outdoor gear and equipment; 3) how much customers were willing to spend on gear and equipment; 4) knowledge and willingness to purchase Cottage Company equipment; and 5) sociocultural factors that may or may not have impacted spending. One hundred and seventy-one customers completed a survey at an outdoor retail store, located in a mid-size city in Central Virginia, which included quantitative and qualitative responses. Findings included: 1) the highest participation rate in an outdoor activity was hiking; 2) customers were willing to spend higher amounts on specific equipment; 3) limits occurred on how much one was willing to spend on equipment; 4) most customers had very little knowledge of the Cottage Company industry and were not willing to spend on such products; and 5) no sociocultural factors existed impacting spending. The last finding should be examined cautiously due to the limited diversity of survey respondents. The findings of this study can assist outdoor retail companies in Virginia to understand their customer preferences and financial constraints associated with specific activities.

Literature Review

Outdoor Recreation Participation and Spending

Participation rates in outdoor recreation has and continues to grow. In 2007, 34.0% of Americans participated in outdoor recreation compared to 52.9% in 2020, the highest rate of participation to date. The largest one-year jump also occurred from 2019 to 2020 with an increase from 50.7% to 52.9% (Outdoor Foundation, 2021).

While the rate of people participating in an outdoor activity increased, these participants were less engaged and participated less often. The casual participant increased but the more dedicated participant (those who participated at least once a week) fell from 40% in 2010 to 33% in 2020. Outdoor activities that respondents were more likely to participate in differed based on income but included fishing, hiking, camping, and running (Outdoor Foundation, 2021).

The pandemic attracted a more diverse outdoor participant: 58% female; younger age (45 vs. 54); slightly more diverse (66% White vs. 71%); more likely to live in urban areas (36% vs. 29%); and a slightly lower income (41% vs. 46% income greater than $100,000) (Outdoor Industry Association and Naxion Research Consulting, 2021). Participants were more likely to choose activities close to home, with a lower barrier to entry such as walking, running, biking, and hiking, with walking the most commonly reported activity (Outdoor Industry Association & Naxion Research Consulting, 2021). Approximately 25% of new participants say they will not continue to participate in their outdoor activities due to the following barriers: travel, resuming other activities, and family demands (Outdoor Industry Association & Naxion Research Consulting, 2021).

The annual gross economic impact of outdoor recreation is surpassing other industries such as mining, utilities, farming, ranching and chemical products manufacturing, accounting for 1.8% of current-dollar domestic product (GDP) in the United States. The largest contributor to the U.S. outdoor recreation

value in 2020 in 25 states was the retail trade sector (Bureau of Economic Analysis, 2020a). In the state of Virginia outdoor recreation accounts for 1.5% of GDP and supports 2.6% of job employment (Bureau of Economic Analysis, 2020b).

Variables that Impact Outdoor Recreation Participation

Participation in outdoor recreation activities can be affected by many different variables such as race, gender, age and socioeconomic background. The economic cost of participating in outdoor activities serves as a constraint for many participants—especially in regard to one's ability or willingness to purchase gear and equipment. Research into constraints has been conducted on how race/ethnicity and/or gender impacts one's participation (Bustam et al., 2011; Schwartz & Corkery, 2011). Schwartz & Corkery (2011) found that both women and people of color were affected by socialization/subculture and economic/access barriers. Analysis of focus groups revealed that both money and time were constraints that hindered women's and people of color's experience the most.

A broader study examined the intersection of various socio-demographics (Shores et al., 2007). Ghimire et al. (2014) analyzed 17 constraints to outdoor recreation activities in the United States and found ethnic minorities, older people, females and rural residents perceived more constraints compared to their counterparts that were White, urban residents, males, and younger. Seventeen constraints were grouped into three broad categories of interpersonal, intrapersonal, and structured constraints. Intrapersonal constraints were more likely to impact African Americans, interpersonal constraints impacted Asians, rural residents faced structural constraints, and females and people aged 66-99 experienced both interpersonal and intrapersonal constraints (Ghimire et al., 2014). Ethnic minorities are most likely to be constrained by time, money, personal safety, language and transportation. Females were more likely to be constrained by time, money, personal health, lack of a companion, personal safety, inadequate facilities, lack of information, fear of outdoor pests and discomfort of being in a natural setting (Ghimire et al., 2014). For those with an income less than $20,000 per year, economics and transportation

were the greatest constraints. For those living in rural environments, money was the major constraint to outdoor recreation. Shores et al., 2007 found time to be the only consistent constraint based on socioeconomic status, age, gender and race/ethnicity. Females were more likely to report a fear of crime. African American respondents were more likely to list transportation, economics, fear of crime, poor health or disapproval of others. Hispanics reported higher levels of transportation, economic, knowledge, fear of crime and health constraints compared to White participants.

Bustam et al., (2011) found African Americans perceived constraints were greatly impacted by their income—those earning less had greater intrapersonal and structural constraints. Hispanics revealed differences based on age and income. Native Americans experienced constraints across a variety of demographics. Females had greater structural constraints compared to males. Older adults perceived greater interpersonal and intrapersonal constraints compared to the lower age group. Th younger age group had greater structural constraints compared to other age groups. Those earning a lower annual income had greater intrapersonal constraints compared to other income groups.

Among Caucasians, constraints differed based on gender, age, income and place of residence. Women had greater interpersonal and structural constraints compared to men. Caucasians 65 and older revealed greater intrapersonal and interpersonal constraints compared to other age groups. Those with less education had greater intrapersonal, interpersonal and structural constraints compared to those with a higher level of education. Those with lower incomes experienced greater intrapersonal, interpersonal and structural constraints compared to those with higher incomes (Bustam et al., 2011).

Research also suggests that as income and education levels increase people have less constraints to outdoor recreation participation (Ghimire et al., 2014). However, there are several intersections that impact one's ability, interest or access in participating. Even when financial and finance-related constraints are reduced, other factors impact one's participation (family, transportation, knowledge etc.).

This current study examined: 1) the rate of participation in specific outdoor activities; 2) spending trends on outdoor gear and equipment; 3) how much customers were willing to spend on gear and equipment; 4) knowledge and willingness to purchase Cottage Company equipment; and 5) sociocultural factors that may or may not have impacted spending.

Methods

Data Collection

Data were collected using a survey comprised of quantitative and qualitative questions collected from customers at an outdoor retail store, located in a mid-sized city in Central Virginia. Demographics of the city included 69.7% were White; 92.4% had a high school degree or higher, and the median household income was $63,470.00 (United States Census Bureau, 2021). The outdoor retail store can be described as a high-end private outdoor equipment retailer.

Institutional Review Board approval was obtained and surveys were collected from Fall 2020 to Summer of 2021 totaling 76 hours over 19 days. A total of 171 participants completed the survey. The survey included the following: 1) a variety of demographic questions; 2) a series of questions regarding the type of outdoor activities one participates in, duration and desire to participate; and 3) a series of questions regarding costs of equipment, amount willing to spend and whether cost limits one's participation. Questions about the term Cottage Company were also included.

Data Analysis

Quantitative data were summarized with descriptive statistics to assess participation rates and spending trends. Regression analysis assessed correlations between spending trends and age, education, income, gender, race and urban vs. rural participants. Open-ended questions were asked to allow participants to expand upon their responses and included: 1) Are there any activities you would like to do but don't?; 2) Why don't you participate in them?; and 3) Does costs limit your participation why or why

not? Representative quotes were extracted to provide context to the quantitative analysis and further examine why respondents do not participate in an activity, and how cost may limit participation.

Results and Discussion

Demographics

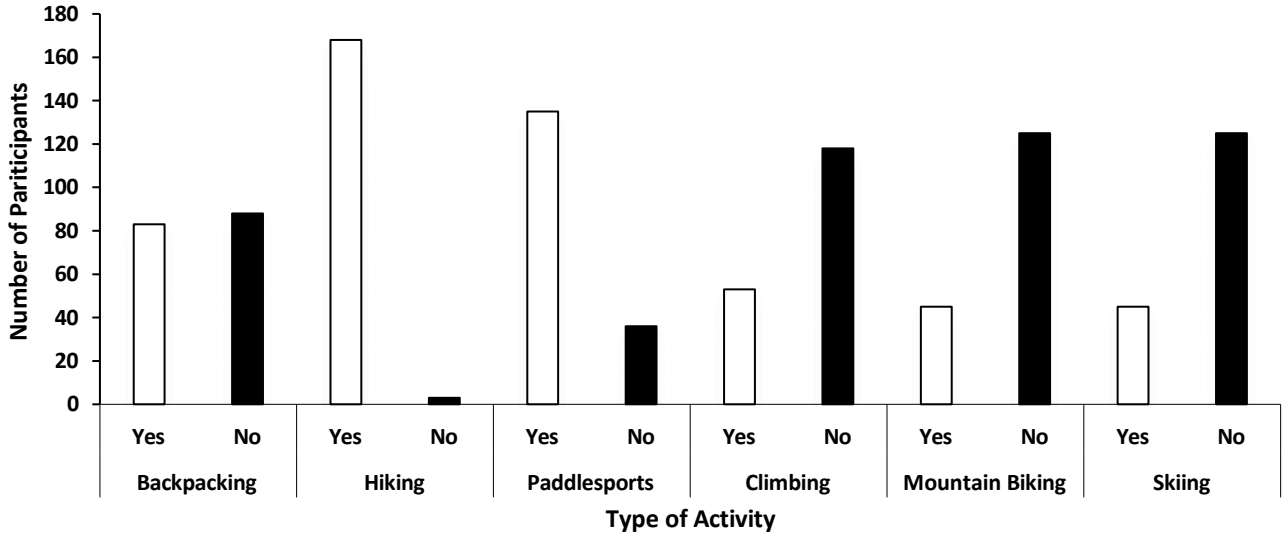
One-hundred and seventy-one participants completed this study. For age classes, 12% were 18 – 20; 26% 21 – 30; 19% 31 – 40; 14% 41 – 50; 17% 51 – 60; and 12% between 61 – 70. For gender, 68% reported male, 29% female and 3% did not report. Marital status included 43% single, and 57% married or with a domestic partner. For work status, 74% were employed, 3% self-employed, 7% full-time homemaker, 4% retired, 10% unemployed, and 2% did not report. Race included 84% White, 9% Black or African American, 2% Hispanic or Latino, 3% Asian or Pacific Islander and 2% did not report. For annual family income, 2% were less than $14,999, 37% were $15,000 to $49,999, 39% were $50,000 t0 $99,999, 10% were $100,000 and over, and 12% did not report.

Outdoor Activity Participation

When asked about activity participation, 98% hiked, 79% participated in paddlesports (kayaking and stand up paddleboarding), 49% backpacked, 31% climbed, 26% mountain biked, and 26% skied (this includes downhill skiing and snowboarding) (Fig. 1). Participants were also asked how often they participated in each activity. The greatest rate of participation was in the hiking category where 11% reported they hiked weekly and 54% reported they hiked 10 times or more a year. In 2017, the Virginia Outdoors Demand Survey reported the top activity for growth in the state of Virginia was hiking. Twenty-one percent of respondents participated in hiking (Virginia Department of Conservation and Recreation, 2018).

Figure 1

Activity Participation



Participants were asked "Are there any activities you would like to do but don't? Why don't you participate in them?" Thirty percent reported no, 16% left the response blank and 54% participants responded yes. Twenty-eight percent reported that time was the main reason they did not participate, 26% money, 17% access, 17% gear and 15% age. The primary activities that survey respondents would like to participate in but do not included snowsports (snowboarding or skiing), biking (primarily mountain biking) and paddle sports (kayaking and stand up paddle boarding).

Participants comments included: "*I would like to mountain bike but I don't currently have any equipment for it and the equipment is expensive. I also want to go for the first time with people who are super experienced."* "*Boats, bikes, and skis are out of my price range to own." "Mountain biking, time and money." "Climbing, Skiing. Not enough time."*

Spending Trends

The amount participants were willing to spend on specific items was also analyzed based on three categories: multipurpose gear used for day adventures (such as a rain coat); gear primarily used on

overnight trips; and specialized gear (climbing, paddlesports and snowsports). It is important to note that the scale for costs of each item was modified based on the item. For example, “low end” day packs at $20.00 or less compared to “high end” day packs exceeding $150.00, whereas a mountain bike $300.00 or less would be considered “low end.” Categories of spending were created for each item according to research on high and low costs for each piece of equipment. The two largest reported spending categories will be shared.

Day Gear

Fifty-four percent of respondents would spend $100.00 on a day pack and 30% would spend $50.00. Thirty-seven percent would spend $200.00 on a pair of hiking boots and 32% would spend $250.00 or more. Thirty-three percent would spend $250.00 on a down coat and 31% would spend $150.00. Thirty-eight percent reported they would spend $100.00 on a raincoat while 29% reported they would spend $140.00. Forty-three percent reported they would spend $100.00 on a base layer and 29% reported they would spend $50.00. Customers were willing to spend significantly more on Day Gear (boots, day packs, down coat, and raincoat). This finding may be due to the fact that customers visiting the outdoor retail store were primarily hikers and value this type of equipment. It may also be that the gear is more versatile and can be used for multiple activities.

Overnight Gear

Thirty-seven percent would spend $150.00 on an overnight pack and 25% would spend $100.00. Thirty-four percent would spend $200.00 on a shelter/tent/tarp while 28% would spend $350.00. Forty percent would spend $200.00 on a sleeping bag and 26% would spend $100.00.

Specialized Equipment

Forty-one percent reported they would spend $100.00 on a climbing harness while 31% reported $20.00 or less. For climbing shoes, 40% reported they would spend $100.00 and 31% would spend $40.00 or less. For a ski packet (boots, bindings, skis and poles or snowboard, boots and bindings) 31% would

spend $300.00 and 22% would spend $125.00 or less. For paddlesports (boat only-either a kayak or stand up paddleboard) 36% would spend $500.00 and 27% would spend $1000.00 or more. For mountain biking, 37% would spend $500.00 and 33% would spend $300.00 or less. Discrepancies occurred on what customers would spend on specialized equipment. This result may be skewed by those who climb versus those who don't. Those who climb understand the cost/value of equipment, whereas those who do not would not be interested in purchasing any climbing gear.

Participants in this study aligned with the most common activities participated in nationally (running, hiking, road biking, backpacking and RV camping) (Outdoor Foundation, 2021). Therefore, they are more likely to spend on equipment relevant to hiking and backpacking compared to that of climbing, paddling and snow sports. This study suggests that most folks in Virginia are participating in easier access outdoor sports.

Pre-and Post-Cost Knowledge

During survey collection several items were placed on a table for respondents to view. Items included a Mountain Laurel Designs sil-nylon grace duo tarp, an Enlightened Equipment quilt style revelation down sleeping bag, and a Patagonia Gortex calcite raincoat. After viewing the items, participants were asked if they would be interested in purchasing the item. Later in the survey, the cost of the items was presented and respondents were asked a second time if they would purchase the item. For the tarp prior to knowing the cost 27% stated they would purchase the item, 26% stated they do not camp and 46% stated they would not purchase the item. After presenting the cost of the tarp at $250.00, 4% stated they would purchase the item, 15% stated that maybe they would purchase the item and 81% stated they would not purchase the item (Figure 2).

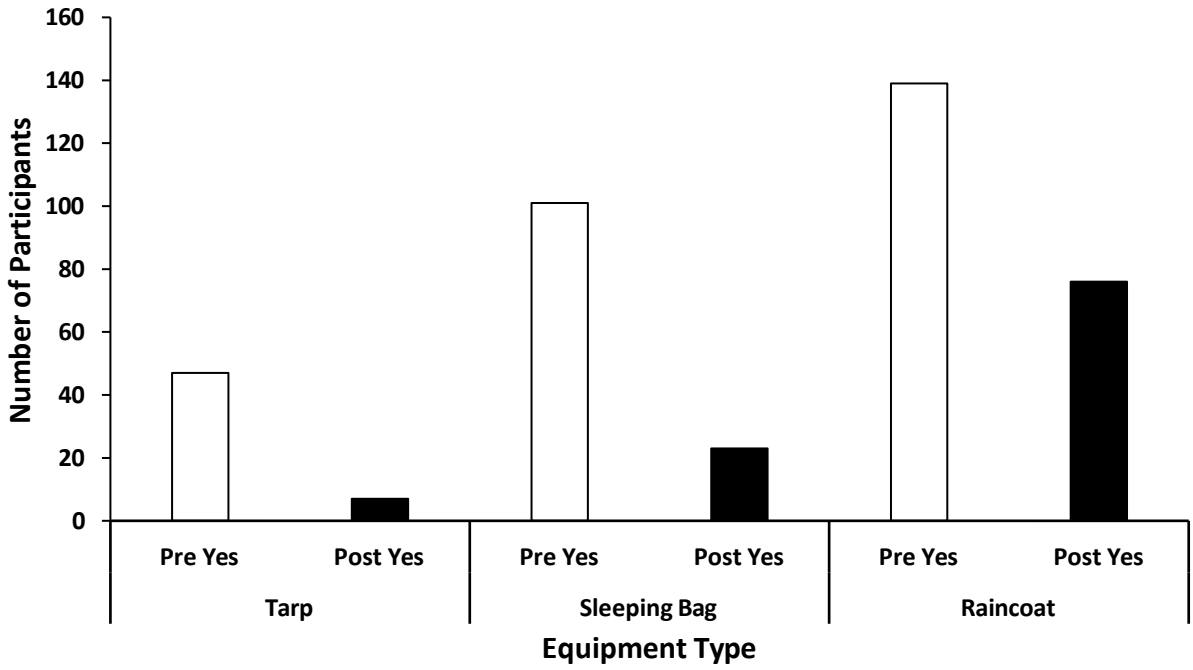
For the sleeping bag, 59% stated they would purchase the item, 24% stated they do not camp and 16% stated they would not purchase the item prior to viewing the cost. After viewing the cost of $430.00,

14% stated they would still purchase the item, 30% stated maybe they might purchase the item, and 56% reported they would not purchase the item (Figure 2).

For the raincoat, 82% stated they would purchase the item prior to viewing the cost. After viewing the cost of $215.00 44% stated they would still purchase the item, 36% reported they might purchase the item and 20% reported they would not purchase the item (Figure 2).

Figure 2

Willingness to Purchase Pre- and Post-Cost Knowledge



Cottage Company Gear Purchasing

Cottage Company is the term used when referring to the many small made-to-order companies in the outdoor industry. These companies usually only take orders online and sometimes only in person at a singular physical store. They typically specialize in highly technical, high performing gear for a variety of activities. Merriam-Webster (2022) defines the cottage industry as “an industry whose labor force consists of family units or individuals working at home with their own equipment;” “a small and often

informally organized industry;" or a "limited but enthusiastically pursued activity or subject." Examples include: Zpacks, Enlightened Equipment, and Mountain Laurel Designs. An example of a Cottage Company based out of Roanoke, Virginia is Mountain Laurel Designs (Mountain Laurel Designs, 2022).

Sixty-four percent of survey participants had not heard of the term Cottage Company while 36% had. Customers were not willing or financially able to spend a significant amount of money on Cottage Company equipment. When customers were shown an item (as on the table) they were very much interested in purchasing the item. Once they learned the cost their willingness to purchase the item decreased (a third or greater)—such as the tarp and sleeping bag. Few customers reported understanding the term Cottage Company, indicating that high end, made-to-order equipment is not a common purchase for most customers. Those who reported understanding the term, were eager to talk with the researcher about their specialized equipment and complete the survey.

Cost Limit One's Participation

Participants were asked "Does cost limit one's participation? Yes, No, Somewhat with a follow-up open-ended question why or why not (please elaborate)." Forty-three percent reported that cost does limit one's participation, 50% reported somewhat and 7% reported no.

Open-ended responses from those who reported "yes" included: "*Folks with limited income would not be able to enjoy the outdoors"* and "*It depends on the activity but gear can get expensive with skiing, backpacking, mountain biking etc*." For those who reported "somewhat" comments included: "*Buy used!* and "*Cheap good gear does exis*t" or

> Can be overwhelming to someone who is entering a hobby such as backpacking who feels like they need to buy all sorts of gear at once. Also, the notion that the best gear is the most expensive gear. Lot of great gear and great prices for someone starting out.

For those who reported "no" comments included: "*Don't need fancy stuff to go outside"* and "*You don't need outdoor clothing to do outdoor sports. It only makes the experience slightly more comfortable. Equipment isn't outrageous if you find budget options and limit selection of sports."*

Regression analysis was conducted to examine whether age, education, income, gender, race and urban vs. rural participants impacted one's spending trends. No correlations were found between any of these factors.

"As income and education levels increase, people are more likely to be economically empowered and, hence, less likely to encounter financial and finance-related constraints. Income helps lower these constraints" (Ghimire et al., 2014. p. 64). It is important to note that many participants in this study had higher incomes, and were visiting a high-end outdoor retail store that caters to specific clientele. Despite these advantages, survey participants recognized and stated that cost did impact their decision-making when purchasing equipment. They also recognized that cost of equipment can and does limit one's participation.

Limitations

This study lacked demographic diversity and represents a specific sector of the population. Customers who completed the survey were primarily male, White, with a family income between $50,000-$99,999. Those who completed the survey are outdoor enthusiasts with a typically higher income who reported that the cost of gear and equipment, access to resources, and lack of expertise in specialized activities limits their participation. It is likely these issues would be of greater impact to those who have less knowledge, access and financial resources to outdoor activities.

Another limitation of the study was that the data were collected at a private high-end outdoor retail store. The researchers recognized this was a limiting factor and tried to obtain permission to conduct the same study at a more generalized sporting goods store but were unable to obtain access (due to corporate constraints and lack of ability to obtain permission). An area of future research would be to conduct the study at other locations.

Conclusion

Results of this research suggest that: 1) the highest rate of participation in an outdoor activity was hiking; 2) customers were willing to spend higher amounts on specific equipment (like a raincoat); and 3) there is a threshold to what customers are willing to spend on equipment. Cost of gear and equipment is a limiting factor for many customers and impacts one's participation, as stated in many of the open-ended responses. Access to Cottage Company equipment is not imperative to survey respondents as their knowledge of this term and type of equipment is limited.

Outdoor recreation and the outdoor retail industry in the state of Virginia is an essential component of the state's economy. Understanding what activities are most highly participated in and how much one is willing to spend on equipment helps retailers offer the appropriate items and consider their value. Identifying what outdoor activities are most participated in informs tourism, marketing, and land-use agencies. Knowing what outdoor activities are cost prohibitive and less accessible may inform non-profits and recreational organizations and aid in their planning.

References

Bureau of Economic Analysis. (2020a). *Outdoor recreation.* Website. https://www.bea.gov/data/special-topics/outdoor-recreation

Bureau of Economic Analysis. (2020b). *2020-Virginia.* Website. https://outdoorindustry.org/wpcontent/uploads/2015/03/ORSA-Virginia.pd

Bustam, T. D., Thapa, B., & Buta, N. (2011). Demographic Differences within Race/Ethnicity Group Constraints to Outdoor Recreation Participation. *Journal of Park and Recreation Administration*, *29*(4), 53–71.

Ghimire, R., Green, G.T., Poudyal, N.C., & Cordell, H.K. (2014). An analysis of perceived constraints to outdoor recreation. *Journal of Park and Recreation Administration, 32*(4), 53-67.

Merriam-Webster. (2022). *Cottage industry.* Website. https://www.merriam-webster.com/dictionary/cottage%20industry

Mountain Laurel Designs. (2022). Website. https://www.mountainlaureldesigns.com

Outdoor Foundation. (2021). *2021 outdoor participation trends report*. Boulder, CO. https://ip0o6y1ji424m0641msgjlfy-wpengine.netdna-ssl.com/wp-content/uploads/2015/03/2021-Outdoor-Participation-Trends-Report.pdf

Outdoor Industry Association, & Naxion Research Consulting. (2021). *2021 special report: The new outdoor participant (COVID and beyond)*. Boulder, CO. https://outdoorindustry.org/resource/2021-special-report-new-outdoor-participant-covid-beyond/

Schwartz, A., & Corkery, M. R. (2011). Barriers to Participation among Underrepresented Populations in Outdoor Programs. *Recreational Sports Journal, 35*(2), 130-144. https://doi.org/10.1123/rsj.35.2.130

Shores, K. A., Scott, D., & Floyd, M. F. (2007). Constraints to Outdoor Recreation: A Multiple Hierarchy Stratification Perspective. *Leisure Sciences*, *29*(3), 227–246. https://doi.org/10.1080/01490400701257948

United States Census Bureau. (2021). *QuickFacts: Charlottesville city, Virginia*. https:// https://www.census.gov/quickfacts/fact/table/charlottesvillecityvirginia/RTN130217

Virginia Department of Conservation and Recreation. (2018). *Virginia Outdoors plan 2018: Bringing Virginia, the benefits of outdoor recreation*. https://www.dcr.virginia.gov/recreational-planning/document/vopall2018.pdf

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Examining Notetaking and Comprehension Skills of Undergraduate Student-Athletes with Learning Disabilities

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Examining Notetaking and Comprehension Skills of Undergraduate Student-Athletes with Learning Disabilities

Abstract

This study examined the impact of the Livescribe™ Symphony Smartpen assistive technology and the Cornell notetaking strategy on the lecture comprehension and quality of written notes of college student-athletes with learning disabilities. The study was conducted with five student-athletes who have documented learning disabilities over a 10-week period in a personal and community health undergraduate course at a public university located in southeast Virginia. Data were collected using immediate free recall exercises, comprehension tests, students' notes and rubric, and students then completed a notetaking experience survey. Overall, individual scores on the comprehension test increased from the pre-intervention (*M*=7.60, *SD*=2.61) to the post-intervention phase (*M*=10.4, *SD*=3.65). The students' free recall exercise scores also increased from the pre-intervention (*M*=6.00, *SD*=1.58) to the post-intervention (*M*=7.60, *SD*=4.04) phase. Participants rated their notetaking experience as having a positive impact on their ability to comprehend lecture material. The highest positive ratings identified that the Cornell notetaking strategy helped them to organize main ideas of their lectures easier. Previous notetaking research identified notetaking efficiency as a challenge for students with students only recording between 20 to 40% of main concepts presented during a lecture (Kiewra, 1985). Results of the notetaking experience survey revealed that students felt that the Livescribe™ pen made it easier to take notes during lectures.

Keywords: Student-athletes, notetaking, learning disabilities, educational tools, Cornell strategy, Livescribe™

Background

An increased number of students with learning disabilities are entering postsecondary educational institutions (Madaus, Banerjee, & Merchant, 2011; Sparks & Lovett, 2014; DaDeppo, 2009; Heiman & Precel, 2003). Seventeen percent of students attending postsecondary institutions in the United States identify as having a learning disability (Stodden & Whelley, 2004; National Council on Disability, 2000). The number of students with LD enrolling in postsecondary institutions has continued to trend upward. According to the National Council for Higher Education (2012), students with learning disabilities account for 30% of students with disabilities enrolling at institutions of higher education.

Federal mandates such as the Americans with Disabilities Act and the Disabilities Education Act (IDEA) Amendments have had a notable impact on the number of students with learning disabilities entering postsecondary institutions (Stodden & Whelley, 2004; Gregg, 2012: Weis, Dean & Osborne, 2016). These mandates have increased access for students with disabilities by requiring colleges and universities to provide students with disabilities with a full range of services (Stodden & Whelley, 2004; Gregg, 2012). The Cooperative Institutional Research Program (CIRP) conducted by The University of California, Los Angeles, found that the most identified disability among first-year college students is learning disabilities. The data from the recent report also expressed a relative increase in students with learning disabilities attending four-year colleges and universities since 1994 (Abreu-Ellis & Hayes, 2009; Henderson, 2001).

A learning disability can be described by multiple characteristics, but is defined as “lifelong and neurologically based involving significant difficulties in acquiring and using skills in listening, speaking, reading, writing, reasoning or mathematics” (National Joint Committee on Learning Disabilities, 2011). Students with learning disabilities experience considerable challenges that hinder academic performance. In addition to difficulties with decoding and reading comprehension, college students with learning disabilities have trouble with language and information processing (Gajria et al., 2007), evaluation and

organization of written content (Martínez-Marderero & Estrada-Hernández, 2008), taking accurate notes (Wook & Rao, 2017), writing (Scott, 1997), and mathematics (Learning Disabilities Association of America, 2005). Compared to students without learning disabilities, students with learning disabilities are more likely to receive lower grades or fail courses (Cortiella & Horowitz, 2014). These students also persist, graduate, and are retained at a lower rate than their peers (Reiff, 2007).

Notetaking is an essential strategy that is positively correlated with academic achievement among college students (Lee et al, 2013; Saran et al., 2022). Notetaking helps students learn course material by increasing their understanding of lecture content and improving the likelihood of recollection later (Piolet, Olive & Kellogg, 2005; Chang & Ku, 2015). It also "increases class attention, active engagement in classes, clarification, and paraphrasing of confusing points and their performance" (Seid & Teklay, 2018, p. 2). Approximately 30-50% of postsecondary level classes are lecture-based and require extensive notetaking (Johnson, 2008; Boyle & Forchelli, 2014). It is the expectation that students can differentiate important information from unimportant information to use notes as a primary method of learning (Badger et al., 2001; Bakunas & Holley, 2001). Instructors often use the information presented in their lecture to construct exams; therefore, notetaking accuracy correlates directly with performance on exams (Putnam et al., 1993).

College students with learning disabilities have difficulty utilizing learning strategies such as notetaking (Evers & Spencer, 2007; Mortimore & Crozier, 2006; Seid & Teklay, 2018). According to Mortimore & Crozier (2006), 78% of students with learning disabilities attending higher education institutions reported having problems recording notes during lectures. Students with learning disabilities have trouble maintaining attention during lectures and therefore miss essential points (Seid & Teklay, 2018). These students encounter difficulty inferring which material is important to record (Suritsky, 1992). After the lecture, students with learning disabilities often cannot understand the notes recorded due to

poor legibility (Suritsky, 1992). Students with learning disabilities frequently lose track of the lecture and cannot write down content fast enough to keep up with the speed of the lecture (Suritsky, 1992).

Past research asserts that students with learning disabilities produce incomplete lecture notes lacking important lecture points (Siegel, 2022; Seid & Teklay, 2018). Hughes & Suritsky (1994) found that students with learning disabilities recorded fewer lecture points than students without learning disabilities. Finding evidence-based tools that can assist students with learning disabilities to deploy notetaking strategies effectively is vital to providing these students with the ability to improve their academic performance and academic success. As recent as this year, Siegel (2023) reported a multiple case study where participants completed surveys, notetaking samples, and writing tasks. The results of Siegel's study identified that "different students may need explicit training and practice…with the notetaking process" (Siegel, 2023, p. 11), suggesting that students may come to the university not understanding how to take notes in class, apart from any contributing learning difficulty.

In addition to managing the daunting task of taking notes, postsecondary students with learning disabilities struggle to comprehend content covered by instructors during lectures. Students with learning disabilities often have difficulty acquiring knowledge from written and oral content and understanding information that has been presented (Jitenra et al., 2011). Studies suggest that comprehension problems result from deficiencies in decoding language and word recognition (Torgesen, 2000). As a result, slow word processing impedes a student's ability to comprehend connected ideas by placing an increased demand on other processes such as working memory (Wolf & Katzir-Cohen, 2001; Shankweiler, 1999; Cutting et al., 2009). Therefore, finding useful tools that can help students with learning disabilities overcome comprehension challenges is imperative in bridging the achievement gap between college students with learning disabilities and their peers.

Assistive technology (AT) is a useful instructional tool to assist college students with learning disabilities in overcoming their academic challenges (Dell et al., 2012; Ok & Rao, 2017; Shaffer &

Schwebach, 2015). Specifically, smartpens, such as the Livescribe™ Symphony Smartpen (LIvescribe™ pen), have been found to improve student outcomes with this population. Livescribe™ pens are handheld smartpens that promote learning among students with learning disabilities (Ok & Rao, 2017). Livescribe™ pens encompass a built-in camera that digitizes handwritten text, which produces digitized notes (Ok & Rao, 2017). The device also captures audio simultaneously as the student is taking notes and synchronizes the audio recording with the handwritten notes (Ok & Rao, 2017). Past research has found digital pens to be effective in assisting students in improving comprehension, organization, and notetaking skills in addition to increasing engagement (Johnson, 2008; Higgins & Raskind, 2005; Doughty et al., 2013). Institutions need to provide students with learning disabilities with assistive technology that will increase their ability to overcome their deficiencies, increase their academic performance, and improve their likelihood of graduating.

Students with learning disabilities experience significant challenges with academic skills such as reading, writing, notetaking, and reading comprehension (Perelmutter, McGregor, & Gordon, 2017; Shaffer & Schwebach, 2015). Existing research suggests that assistive technology and academic strategies can help students improve their academic skills, persistence toward graduation, and overall academic achievement (Ok & Rao, 2017; DaDeppo, 2009). Morehead et al. (2019) stated that “effective assistive technology resources and educational strategies must be evaluated as supports for students with learning disabilities in postsecondary education” in order to improve academic achievement (p. 808).

The purpose of this research was to explore the impact of the Livescribe™ pen on the quality of notes and comprehension abilities of student-athletes with learning disabilities. Secondly, the study sought to examine the Cornell notetaking strategy’s impact on notetaking quality and comprehension of student-athletes with learning disabilities. Finally, the study aimed to explore student-athletes’ perceptions and experiences using the Livescribe™ pen and Cornell notetaking strategy. Based on this, the three research questions guiding this study were:

(1) How does the use of the Cornell notetaking strategy supported with a Livescribe™ pen affect the notetaking quality of student-athletes with learning disabilities?

(2) How does the use of the Cornell notetaking strategy supported with a Livescribe™ pen affect the comprehension of lecture content and vocabulary among student-athletes with learning disabilities? and (3) What are the experiences and perceptions of student-athletes with learning disabilities using Livescribe™ pens and their impact on notetaking and comprehension of lecture content?

Methodology

Setting

This research was conducted at an urban public historically black college and university (HBCU) located in Norfolk, Virginia, in the Southeast region of the United States. Its undergraduate enrollment at the time was 4,689, with a population of 84% Black or African American students, 3.8% White students, and 12% of students identified as 'other' (NSU, 2018). The gender distribution of the university's population is approximately 65% female and 35% male. Seventy-five percent of the undergraduate population receive some form of need-based financial aid.

Participants

Participants in this study were five undergraduate student-athletes who received support through the Student-Athlete Academic Support Center's Learning Services program and were enrolled in a Personal and Community Health (HED 100) course. Purposeful sampling was utilized to select the participants for the study. Purposeful sampling allowed the opportunity to choose students who were "information rich", allowing us to learn about the issues of central importance to the study (Patton, 1999, p. 169). This sampling method assisted maximize the understanding of the phenomenon being studied. All participants in this study were enrolled in the learning services program and had a documented learning disability. Learning disabilities included ADD, ADHD, language disability, math disability, and/or reading disability. Hence, there are three criteria for participation in the study; (1) the student must have

a diagnosed learning disability with documentation filed in OASIS, (2) the student must be a varsity student-athlete and, (3) the student must be enrolled in an introductory personal and community health course.

Pretreatment

During the pretreatment phase, students' comprehension skills were assessed using baseline measures, an immediate free recall exercise and a comprehension test. Students took notes using pen and paper while watching a video-recorded lecture. Immediately following the lecture, students participated in an immediate free recall exercise. Students were provided the immediate free recall sheet and given five minutes to write as many vocabulary terms, lecture points, and main ideas from the lecture. Students' immediate free recall exercises were collected, and each student was administered a comprehension test based on the lecture content.

Training

During the pretreatment, students were taught how to use the Livescribe™ pen in conjunction with the Cornell notetaking strategy using a PowerPoint presentation and Livescribe™ pen video tutorial. During the training, the students were provided with an overview of the Cornell notetaking strategy and taught how to set up their paper using the strategy. The students were also trained to pay attention to visual and verbal cues and will be instructed on the process of reviewing their notes by writing summaries. The training followed the steps of strategy instruction, which include describing the strategy, modeling the strategy, providing guided practice and feedback, and independent practice (Baharev, 2016). It was explained to students that they should follow these steps when taking notes using the Cornell strategy; (1) write the topic/title of the lecture and date in the top quadrant, (2) write the main notes in the right quadrant, (3) review the main notes and write the keywords and ideas in the left quadrant, (4) write a summary of the lecture in the bottom quadrant.

After the PowerPoint and video tutorial, the students were provided with their Livescribe™ pen, notebook, and black and red ink cartridges. The students were then provided with a tutorial on the features of the smartpen. First, the instructor modeled how to use the pen, and the students were asked to mimic each process along with the instructor. Students were then taught how to turn the pen on and off, how to activate the Pencast (audio-recording feature), how to start, stop, rewind, and fast forward through their notes, and how to adjust the playback volume. Students were taught how to amend their notes after the lecture by switching their ink to red and playing back the Pencast using headphones. Finally, the instructor explained the process of amending notes using the smartpen by changing the pen tip to red and listening to the audio recorded (Pencast) during a lecture.

Practice

During these sessions, students practiced using the Livescribe™ and Cornell notetaking strategy during class sessions. During the class sessions, students took notes using the Livescribe™ and Cornell notetaking strategy. The day after each class session, students attended an amendment session during which they listened to the Pencast of the lecture recorded during the previous class session and made amendments to their notes. In this session, students also practiced switching the pen ink from black to red, amending their notes, and writing summaries.

Post-Intervention

Students took notes using the Livescribe™ pen and Cornell notetaking strategy while watching a video-recorded lecture. Immediately following the lecture, students participated in an immediate free recall exercise. Students were given the immediate free recall sheet and given five minutes to write as many vocabulary words, lecture points, and main ideas from the lecture. Students immediate free recall exercises were collected, and each student was administered a comprehension test based on the lecture content.

Data Collection

A variety of data collection sources were used to investigate the research questions. These data collection methods included rubric and student notes, comprehension tests (pre-test/post-test), immediate free recall (IFR) exercises, and a notetaking experience survey. Each of the data collection methods are described below. The alignment between the research questions and data sources is depicted in Table 1.

Table 1

Research Questions and Data Sources

Research Questions	**Data Sources**
RQ1: How does the use of the Cornell notetaking strategy supported with a Livescribe™ pen affect the notetaking quality of student-athletes with learning disabilities?	• Rubric and Student Notes
RQ2: How does the use of the Cornell notetaking strategy supported with a Livescribe™ pen affect the comprehension of lecture content and vocabulary among student-athletes with learning disabilities?	• Comprehension Test • Immediate Free Recall Exercise (IFR)
RQ3: What are the experiences and perceptions of student-athletes with learning disabilities using Livescribe™ pens and their impact on notetaking and comprehension of lecture content?	• Notetaking Experience Questionnaire

Rubric and Student Notes

The quality of students' notes was evaluated using a rubric adapted from Englert et al. (2009). Students' notes were collected during each phase of the intervention (pre-intervention and post-intervention) and were analyzed using a rubric. The rubric evaluated the student's notes based on four traits: (1) organization, (2) content, (3) reduction, and (4) summarization. For each component in the rubric, students received a score ranging from 0 -10. Two independent raters scored the students' notes using the rubric. The use of two raters helped determine interrater reliability (Belson, Hartman &

Sherman, 2013). The percentage of agreement was used as a measure of interrater reliability (LaBreton & Senter, 2008).

Comprehension Test

A comprehension test gathered data on students' comprehension by assessing the vocabulary and knowledge remembered from the lecture. During the pre-intervention phase, students completed a comprehension test on a topic, and during the post-intervention phase, students completed a comprehension test on an equivalent topic. After viewing the lecture, students were then administered a comprehension test based on the lecture. The tests consisted of 15 questions. Each question consisted of a stem with four options. One of the four options was the correct answer. The test was then scored using an answer key. Kobayashi (2005) and Boyle & Joyce (2019) found that using both a multiple-choice test and an immediate free recall measure can provide an assessment of learning differences that result from a notetaking intervention (p. 7). Multiple-choice tests provide retrieval cues and a recall test condition that promotes the autonomous retrieval of cues among learners (Kobayashi, 2005).

Immediate Free Recall Exercise

A five-minute immediate free recall (IFR) exercise was used as a measure of comprehension. This strategy, suggested by Ruhl & Suritsky (1995) and Kobayashi (2005), has been useful in evaluating the retention of information from lectures. The exercise was used to gather data on the number of total lecture points (TLP) and vocabulary (VOCAB) remembered by the students from the lecture (Kobayashi, 2005). The IFR exercise was conducted twice, once during the pre-intervention phase and once during the post-intervention phase. Immediately following the Livescribe™ pen intervention, students were required to write down as many facts, vocabulary, and ideas from the lecture on the immediate free recall sheet provided to them. The exercise was analyzed to determine the number of lecture points and vocabulary remembered from the lecture.

Notetaking Experience Survey

A notetaking experience survey was used to gather quantitative data on the students' experiences and perceptions after using the Livescribe™ pen and Cornell notetaking strategy. The survey consisted of two sections with a total of 10 Likert-type items ranging from (strongly disagree) to (strongly agree). Students completed a paper version of the survey and were required to circle their responses. The researcher then coded the data into a software analysis system. An expert also reviewed the items to ensure the content validity of this instrument.

Findings

Quantitative data were collected to evaluate the outcome of the Livescribe™ pen and Cornell notetaking intervention. Quantitative data were collected using an immediate free recall exercise, comprehension test, rubric evaluation of students' notes, and a notetaking experience survey. Multiple quantitative methods were used to provide a well-rounded understanding of the impact of the Livescribe™ pen and Cornell notetaking intervention on the students' notetaking and comprehension. The following section will provide an overview of the findings of the student notes and rubric, immediate free recall exercises, comprehension tests, and notetaking experience survey.

Student Notes and Rubric. The student notes were collected during the pre-intervention and post-intervention phases and assessed using a rubric adapted from Englert et al. (2009). The rubric evaluated the students' notes on four specific traits: (a) organization, (b) content, (c) reduction, and (d) summarization (see Appendix A). The maximum score in each category was 10, and the total score each student could earn was 40. Two independent raters scored the students' notes using the rubric. The interrater reliability for IFR was calculated to be .96 for CLP, .96 for NCLP, .96 for TLP, and .99 for TW

The students' organization scores increased from pre-intervention (*M*=1.40, *SD*=0.89) to post-intervention (*M*=7.60, *SD*=2.51) by 6 points. A smaller increase (.20) was observed in the students' content scores from pre-intervention (*M*=7.20, *SD*=2.77) to post-intervention (*M*=7.40, *SD*=3.05). Similarly, there

was a .20 increase in the students' reduction scores from pre-intervention (*M*=8.20, *SD*=2.49) to post-intervention (*M*=8.40, *SD*=2.51). There was also a noteworthy increase in the students' scores summarization scores before (*M*=0.60, *SD*=1.34) and after (*M*=4.60, *SD*=2.19) the intervention.

Caleb and Damien[1] showed the largest increase in their organization score, with their scores increasing from one to ten from pre-intervention to post-intervention. Marcus showed the most improvement in his content score which increased from three to nine. Kendall's content score decreased from pre-intervention (9) to post-intervention (2). Caleb and Jay earned the highest reduction score (10). Caleb saw the largest increase from his pre-intervention reduction score (6). On the contrary, Kendall's reduction score decreased from pre-intervention (10) to post-intervention (4), while Jay and Damien's scores changed minimally. The summarization scores increased for each student. Scores in the summarization category increased for each student from pre-intervention to post-intervention.

Immediate Free Recall Exercises. The students' comprehension skills were assessed using an immediate free recall exercise (IFR) during the pre-intervention and post-intervention phases. The students used their traditional notetaking method to record notes during the pre-intervention phase, and the students recorded notes using the Cornell notetaking strategy during the post-intervention phase. The students were evaluated on total vocabulary (TV), and total main points (TMP) remembered from the lecture. The number of TV recorded increased from the pre-intervention phase (*M*=5.60, *SD*=3.51) to the post-intervention phase (*M*=7.80, *SD*=2.39) phase. The students' TMP scores also increased from the pre-intervention (*M*=6.00, *SD*=1.58) to the post-intervention (*M*=7.60, *SD*=4.04) phase.

***Comprehension Test*.** Students were given a comprehension test during the pre-intervention and post-interventions phases to gather data on students' comprehension of vocabulary and knowledge remembered from the lecture. The tests consisted of 15 questions, each comprising a stem with four options. The maximum potential score of each test was 15. Four of the five students' comprehension test

[1] Pseudonyms assigned to student participants.

scores increased from the pre-intervention (*M*=7.60, *SD*=2.61) to the post-intervention phase (*M*=10.4, *SD*=3.65). Kendall's scores remained the same for both the pre-intervention (4) and post-intervention (4) phases.

***Notetaking Experience Survey*.** The notetaking experience survey was used to gather quantitative data on the students' experiences and perceptions after using the Livescribe™ pen and Cornell notetaking strategy. The survey consisted of two sections with a total of 10 Likert-type items ranging from (strongly disagree) to (strongly agree). Students were required to circle only one response for each survey statement with either pen or pencil and were given approximately 5 minutes to complete the survey. The survey was administered at the end of the post-intervention phase.

Scores for the notetaking survey were calculated by first changing each answer into a numerical score. For positive-worded Likert-statements, a response of "strongly agree" had a numerical value of 5, "agree" – 4, "neutral" – 3, "disagree" – 2, and "strongly disagree" – 1. For negative-worded statements, a reverse code was used: "strongly disagree" – 5, "disagree" – 4, "neutral" – 3, agree" – 2, and "strongly agree" – 1. Each survey statement was scored using the above criteria, and a total score was calculated for each student's survey. See Appendix G for a sample survey. The survey questions related to five primary themes (1) usefulness of the Livescribe™ pen, (2) usefulness of the Cornell notetaking strategy, (3) ease of use, (4) future use of the Livescribe™ pen, and (5) general perception.

Usefulness of the Livescribe™ pen. Responses for survey items one, two, three, and four captured the students' perceptions on the usefulness of the Livescribe™ pen were positive (*M*=4.45, *SD*=0.59). The questionnaire data indicated that all the students agreed that the Livescribe™ pen made it easier to take notes during the lecture (*M*=4.20, *SD*=0.84). In addition, all the students indicated that using the Livescribe™ pen helped them review notes after the lecture. It was a consensus among all the students that the Livescribe™ pen made them feel more comfortable taking notes during lectures and the audio Pencast helped them amend their notes and add missing points from the lecture (*M*=4.40, *SD*=0.55). The

descriptive statistics for the questions relating to "usefulness of the Livescribe™ pen" are displayed in Table 2.

Table 2

Descriptive Statistics for Usefulness of the Livescribe™ pen Survey Items

Survey Items	*M*	*SD*
1. The Livescribe™ pen made it easier to take notes during the lecture.	4.20	0.84
2. Using the Livescribe™ pen helped me to review my notes after the lecture.	4.80	0.45
3. The Livescribe™ pen made me feel more comfortable taking notes during lectures.	4.40	0.55
4. The audio Pencast helped me to amend my notes and add missing points from the lecture.	4.40	0.55

Usefulness of the Cornell Notetaking Strategy. Items five, six, seven, and eight related to the usefulness of the Cornell notetaking strategy (*M*=4.40, *SD*=0.67). All students indicated that the Cornell notetaking strategy helped them to organize the main ideas of the lecture better. Furthermore, most the students (n=4) found that summarizing lecture points helped them remember information better and generating and answering questions helped them better understand and remember information. Also, most of the students (n=4) agreed that reviewing the summaries in their notes helped them recall important lecture points (*M*=4.40, *SD*=0.55). The descriptive statistics for the questions relating to "usefulness of the Cornell notetaking strategy" are displayed in Table 3.

Table 3

Descriptive Statistics for Usefulness of the Cornell Notetaking Strategy Survey Items

Survey Items	*M*	*SD*

5. The Cornell notetaking strategy helped me to organize the main ideas of the lecture better	4.80	0.45
6. Summarizing lecture points helped me better remember information.	4.20	0.84
7. Generating and answering questions help me better understand and remember information.	4.20	0.84
8. Reviewing the summaries in my notes helped me to recall important lecture points.	4.40	0.55

Ease of use. Questions nine, ten, eleven, and twelve provided insight into the students' perception of the ease of use of the Livescribe™ pen and Cornell notetaking strategy (M=4.20, SD=0.61). After the training and instruction, all students found that it was easy to learn how to use the Livescribe™ pen. Also, all of the students indicated that it was easy to set up their notebook using the Cornell notetaking strategy (M=4.20, SD=0.61). Most of the students (n= 4) disagreed that the Cornell notetaking strategy was harder to use than their previous notetaking method. However, one student agreed that the Cornell notetaking strategy was harder to use than their previous notetaking method. All of the students responded positively to using the Livescribe™ pen with the Cornell notetaking strategy, indicating that it was easy to use both resources together to take notes (M=4.20, SD=0.61). The descriptive statistics for the questions relating to the subscale "ease of use" are displayed in Table 4.

Table 4

Descriptive Statistics for Ease of Use Survey Items

Survey Items	*M*	*SD*
9. It was easy to learn how to use the Livescribe™ pen with training and instructions.	3.60	0.55
10. It was easy to set up my notebook using the Cornell notetaking strategy.	4.60	0.55

11. The Cornell notetaking strategy was harder to use than my previous notetaking method.	3.60	0.89
12. It was easy to use the Livescribe™ pen with the Cornell notetaking strategy to take notes.	4.20	0.45

Future Intention to Use Livescribe™ pen. The students' future intention to use the Livescribe™ pen was evaluated by item 13 (*M*=4.80, *SD*=0.45). Responses leaned towards positive support for future use of the Livescribe™ pen and Cornell notetaking strategy. All the students indicated that they would continue to use the Cornell notetaking strategy and Livescribe™ pen in the future. Descriptive statistics for this subscale are found in Table 5.

Table 5

Future Intention to Use the Livescribe™ pen

Survey Item	*M*	*SD*
13. Using Cornell notetaking with the Livescribe™ pen can help me in other courses	4.80	0.45

Anticipated Benefits of Cornell notetaking Strategy and the Livescribe™ pen Together. The perceived benefits of the Cornell notetaking strategy coupled with the Livescribe™ pen were assessed by items 14, 15, and 16 (*M*=4.60, *SD*=0.45). All of the students indicated that the Cornell notetaking strategy and Livescribe™ pen could help them in other courses. In addition, every student agreed that it was beneficial to use the Cornell notetaking method with the Livescribe™ pen (*M*=4.20, *SD*=0.45). Each student also agreed that the Cornell notetaking method could be useful without the Livescribe™ pen (*M*=4.80, *SD*=0.45). The descriptive statistics for the anticipated benefits subscale are displayed in Table 6.

Table 6

Descriptive Statistics for Anticipated Benefits Survey Items

Survey Items	*M*	*SD*
14. I will continue to use the Cornell notetaking strategy and Livescribe™ pen in the future.	3.60	0.55
15. It is beneficial to use the Cornell notetaking method with the Livescribe™ pen.	4.20	0.45
16. The Cornell notetaking method can be useful without the Livescribe™ pen.	4.80	0.45

Discussion

This discussion aims to provide a comprehensive understanding of the findings integrated with existing literature.

Research Question 1: How does the use of the Cornell notetaking strategy supported with a Livescribe™ pen affect the notetaking quality of student-athletes with learning disabilities?

This research question was developed to explore the impact of the Cornell notetaking method and the Livescribe™ pen on the notetaking quality of college student-athletes with learning disabilities. Previous research indicates that the Livescribe™ pen is effective in increasing the quality of students' notes in multiple areas to include selectivity, organization, and total number of vocabulary and main points recorded (Belson et al., 2013; Ok & Rao, 2017; Joyce & Boyle, 2019; Boyle & Joyce, 2019). The Cornell notetaking strategy has also been found to improve aspects of students notes to include organization, content, and selectivity (Belson et al., 2013). The data from the three data collection instruments were used to illuminate how the student-athletes' notes were impacted by the Cornell notetaking strategy and the Livescribe™ pen. Data from the rubric, notetaking experience survey, and semi-structured interviews were triangulated to develop comprehensive depiction of the impact of both tools. The data analysis

revealed three major themes relating to the impact of the Livescribe™ pen and Cornell notetaking strategy on the quality of students' notes: (a) content and (b) organization.

Content. In a previous pilot study, Belson et al. (2013) found that the Livescribe™ pen and Cornell notetaking strategy assisted students in increasing the number of main ideas recorded in their notes in addition to enhancing the depth and breadth of each topic recorded (p. 20). In addition, Joyce & Boyle (2019) investigated the impact of a Livescribe™ pen and notetaking intervention on students with and without learning disabilities. They found that students with learning disabilities, who used the smartpen, increased their notes by an average of 53 words (p.7). In addition to recording more words, students in the intervention group recorded more lecture points. Students with learning disabilities who used the Livescribe™ pen in their study outperformed the control group, who used traditional pen and paper to take notes, in total words and total lecture points recorded. Their findings suggest that the Livescribe™ pen may be effective in closing the gap between students with and without learning disabilities.

The baseline results of the rubric supported findings of previous notetaking research suggesting that many students are poor note-takers (Titsworth, 2001). On average, students only record approximately 20-40% of the important points presented during a lecture (Titsworth, 2001; Boyle, 2010). Students with learning disabilities fare worse in this area, recording lower numbers of main points than students without learning disabilities (Boyle, 2010). There was a wide variation in student-athletes' total pre-intervention rubric scores which ranged from 9 to 20. Differences were also displayed in the four categories. The data analysis revealed a wide variation in students' content and reduction scores. The students' pre-intervention content scores ranged from three to 10 and their pre-intervention reduction scores ranged from five to 10. The students who scored higher in the pre-intervention evaluation presented some form of previous notetaking training.

Although not confident in their overall notetaking ability, these students exhibited prior knowledge of notetaking strategies. There was one student, whose content and reduction scores decreased from pre-intervention to post-intervention. Although this student recorded a reasonable number of words in their post-intervention notes, the student recorded multiple unnecessary words and incorrect lecture points for which he could not receive credit. The decline in the student's score from pre-intervention to post-intervention could also be attributed to a lack of engagement and effort during the post-intervention phase.

This study supports the findings of Belson et al. (2013) and Joyce & Boyle (2019), who found the Livescribe™ pen and Cornell notetaking strategy to be effective in improving the content and quality of notes among students with learning disabilities. The impact of the Livescribe™ pen and Cornell notetaking intervention is reflected in the students rubric scores from pre-intervention to post-intervention. The students' scores increased in the content category which assessed the representation of the lecture in the students' notes including main ideas and supporting details. The students' mean content scores increased from pre-intervention (*M*=7.20) to post-intervention (*M*=7.40). The students' mean reduction scores, which reflected the number of keywords and questions recorded in their notes, also increased from pre-intervention (*M*=8.20) to post-intervention (*M*=8.40). Although there were small increases in the areas of content and reduction, the findings support previous notetaking studies.

***Organization*.** The quality of notes is often evaluated by completeness, accuracy, and organization (Baharev, 2016). Cornell notetaking is a strategy that can assist students in producing well-organized notes, allowing learners to identify key concepts quickly (Pauk, 2000, Belson et al., 2019). Their research suggests that the strategic organization of the lecture content can promote problem-solving when material is recalled later. The organization category of the rubric assessed students' notes on the presence of the Cornell format and organizational pattern.

Students were awarded points if the Cornell notetaking format was followed, and the features (lecture topic, date, and page number) were present on the note page. Because none of the students were previously taught how to use the Cornell strategy, each student was awarded a baseline score of one for reflecting some form of structure within their notes. One student was awarded a baseline score of three because he presented additional components of the Cornell strategy in his pre-intervention notes. Therefore, attention should be given to the post-intervention scores which represent the students' mastery of the Cornell notetaking strategy after receiving training.

The students' post-intervention organization scores varied. Two students scored a 10/10, earning full credit in this category. These students successfully implemented the Cornell method into their notetaking process by using the correct format and including all the Cornell features. Two students earned 5/10 in this category. Both students used the proper format in their notes, including each of the four required sections. The students did not receive points for the missing multiple features of their notes such as the title, date, and page number. One student earned an 8/10 post-intervention organization score. This student's notes accurately reflected the Cornell format; however, the student did not consistently place the title of the lecture at the top of the page. The inability for all students to successfully implement the Cornell features and format could be the result of insufficient training, indicating that students may need training over a longer period of time and practice to fully grasp the Cornell notetaking strategy.

Research Question 2: How does the use of the Cornell notetaking strategy supported with a Livescribe™ pen affect the comprehension of lecture content and vocabulary among student-athletes with learning disabilities?

The goal of this research question was to investigate the impact of the Cornell notetaking strategy, supported by the Livescribe™ pen, on the comprehension of college student-athletes with learning disabilities. Students with learning disabilities have difficulties comprehending and recalling information taught during lecture courses (Wolf, 2001; Boyle, 2010; Suritsky, 1994). Faber et al. (2000) found that the

Cornell notetaking method increases comprehension among high school students. In addition, Baharev's (2016) findings suggest that components of the Cornell notetaking strategy can assist middle school students in understanding and remembering information. The impact of the Cornell method has also been found at the postsecondary level. In their research, Tsai-Fu & Wu (2010) studied the Cornell notetaking strategy with college freshmen. The students in their study performed better on comprehension measures after receiving training on the Cornell notetaking strategy. These results suggest that the Livescribe™ pen and Cornell notetaking strategy positively impacted students' ability to carry out multiple tasks such as (a) comprehending and recalling lecture content and (b) summarizing and consolidating information.

***Comprehending lecture content*.** Students with learning disabilities experience significant challenges employing academic strategies such as comprehension and recall (Schuchardt et al., 2008; Wolf, 2001). These challenges are a direct reflection of deficiencies in executive functioning which impact students' ability to coordinate cognitive processes such as consolidating information into long-term memory (Lindstrom & Skinner, 2003). Poor metacognitive abilities also contribute to ineffective regulation of cognitive processes necessary for satisfactory academic performance. Previous research suggests that features of the Livescribe™ pen, such as the Pencast Playback, can assist students in compensating for poor comprehension skills (Belson et al., 2013). The audio playback feature helps students with notetaking challenges to learn important from lectures to be used on future exams and assignments (Belson et al., 2013).

Other findings from previous research propose that a systematic notetaking strategy such as the Cornell method can assist students in enhancing understanding and remembering lecture content (Boyle, 2010; Akintunde, 2013). Jacobs (2008) studied the impact of the Cornell method among ninth-grade English students. His findings suggest that the Cornell notetaking method can help students to synthesize and apply information and perform at a higher level. This study's findings support those of Jacobs (2008),

Boyle (2010) and Akintunde (2013), which indicate that the Cornell notetaking strategy can assist students to synthesize and consolidate information learned during lectures.

The results of the immediate free recall exercise implied that students' comprehension improved with usage of the Cornell notetaking strategy and Livescribe™ pen. The students' total vocabulary scores increased from pre-intervention (*M*=5.60) to post-intervention (*M*=7.80). A positive increase was also found in the students' total main points scores which also increased from pre-intervention (*M*=6.00) to post-intervention (*M*=7.60). These findings show that the students' short-term mastery of the lecture content improved after using the Cornell method and the Livescribe™ pen.

The findings from the IFR are consistent with findings of previous research (Joyce, 2016; Boyle, 2010). Similar improvements were noticed in students' comprehension test scores. Four of the five students' scores improved from pre-intervention to post-intervention. These findings are consistent with Baharev's (2016) and Boyle's (2010) findings which reflected increases in students' performance on comprehension measures after implementation of a notetaking intervention. After using the Cornell notetaking strategy and Livescribe™ pen over the eight-week period, the students performed better on both comprehension measures. These findings provide support for the use of a digital pen and notetaking strategy to help students improve comprehension of lecture content.

***Summarizing and consolidating information*.** Summarization leads to a deeper understanding of information which can result in better performance on conceptual and integrative assessments (Baharev, 2017). In addition to summarizing information, the process of consolidating information is also important in transitioning information from short-term to long-term memory (Peverly, 2006). Consolidating information recorded in notes helps to reduce the natural process of forgetting information (Kiewra, 1987). The results of the notetaking experience questionnaire provide insight on the impact of using the Cornell notetaking strategy and Livescribe™ pen on students' comprehension. Most of the students (n=4) agreed that summarizing lecture points assisted them in remembering information taught during the

lecture (*M*=4.40, *SD*=0.55). The findings suggest the notetaking intervention can assist students in synthesizing and reorganizing information presented in the lecture, consistent with previous research (Baharev, 2016; Boyle, 2010; Boyle & Weishaar, 2001; Joyce & Boyle, 2019b).

***Organization*.** Previous research suggests that notetaking promotes organization, active engagement, and the preservation of information (Boyle & Weishaar, 2001; Titsworth, 2004). Notetaking literature indicates that students who take notes are more efficient in organization and information processing (Baharev, 2016). The analysis of the rubric indicated that students' organization improved after the intervention. Improvements in organization scores ranged from four to nine. The organization category of the rubric was specific to the components of the Cornell notetaking strategy. Therefore, students were evaluated based on the representation of the components of the Cornell method in their notes. Most students were given a baseline score of one if they had some form of organizational structure reflected in their notes. One student received a baseline score of three because his notes reflected components of the Cornell method, indicating that he may have had previous notetaking training. Increases in the students' organization scores reflect a mastery of Cornell notetaking strategy and its components.

Research Question 3: What are the experiences and perceptions of student-athletes with learning disabilities using Livescribe™ pens and their impact on notetaking and comprehension of lecture content?

The goal of this research question was to explore the students' experiences using the Livescribe™ pen and Cornell notetaking strategy, while gaining insight into their perceptions of the two resources and their impact on notetaking and comprehension. Limited research has explored students with learning disabilities' perceptions and experiences of using digital pens and systematic notetaking strategies (Baharev, 2016; Joyce, 2016; Belson et al., 2013; Patti & Vince Garland, 2015). The results of the notetaking experience survey were evaluated to develop a comprehensive understanding of the students'

experiences and perceptions using the Cornell notetaking strategy and Livescribe™ pen. Analysis of these measures revealed that students had (a) positive perceptions of the Cornell notetaking strategy, (b) positive perceptions of the Livescribe™ pen and had positive perceptions of the (c) combined use of the Livescribe™ pen and Cornell notetaking strategy.

Positive perceptions of Cornell notetaking. Baharev (2016) studied the impact of the Cornell notetaking strategy among middle school students and found that students felt that the Cornell method helped them to take better notes and generating and answering questions helped students to remember and understand information from the lecture better (p. 114). Faber et al. (2000) discovered similar findings indicating that students who were taught how to use the Cornell notetaking strategy scored significantly higher on comprehension measures than students who were not taught the Cornell method. The findings of this research affirm those of the previous study, suggesting that Cornell notetaking strategy can assist students with various aspects of notetaking and comprehension. The findings revealed regarding students' perceptions of the Cornell notetaking strategy reflected two major themes: (a) helpfulness and (b) challenges.

Student engagement. Student engagement impacts students' ability to recall and comprehend information presented during a lecture (Baharev, 2016). Students who engage in the lecture also perform better on assessments. Although limited research has investigated the impact of assistive technology, such as digital pens, on student engagement, Joyce (2016) found positive support for the use of the Livescribe™ pen to increase student engagement. For example, Joyce (2016) indicated that students were more focused and engaged in the lecture. The data analysis revealed similar findings as the previous study.

Note quality. Previous research found that Livescribe™ pen to be helpful in improving the quality of the students' notes in multiple areas to include total word count, total vocabulary, and total lecture points (Boyle & Joyce, 2019). Belson et al. (2013) found that using a digital pen increased the quality of students' notes in two specific areas, selectivity and content. Students' comments support the previous

research suggesting that the features of the Livescribe™ pen are effective in helping to improve the quality of their notes. Students responded positively to the statement "The audio Pencast helped me to amend my notes and add missing points from the lecture," further confirming the perceived benefit of this feature. Improvements in students' notes can be attributed to the features of the Livescribe™ pen, specifically Pencast, which allows students to amend their notes using an audio recording of the lecture.

Notetaking efficiency. Previous notetaking research identifies notetaking efficiency as a challenge for students with students only recording between 20 to 40% of main concepts presented during a lecture (Kiewra, 1985). The overall results of the notetaking experience survey revealed that students felt that the Livescribe™ pen made it easier to take notes during lectures.

Helpfulness. Previous literature suggests that the Livescribe™ pen can help students take better notes in lecture courses (Boyle & Joyce, 2019b; Belson et al., 2013, Ok & Rao, 2017). The findings are consistent with existing literature citing the benefits of digital pens for students with learning disabilities. There are a few notable findings relating to the overall helpfulness of the Livescribe™ pen including its impact on students' confidence and focus levels. Reflecting on his ability to take notes post-intervention, one student stated that the Livescribe™ pen was helpful in lecture courses, especially for students who are not good note-takers. This suggests that students who do not consider themselves to be good note-takers are empowered by the Livescribe™ pen to better note-takers. Other findings portray the impact of the Livescribe™ pen on students' ability to focus during lecture courses. Students with learning disabilities often struggle to maintain the level of focus necessary to record notes that encompass important lecture points and vocabulary (Boyle & Joyce, 2019; Piolat, Olive, & Kellogg, 2005).

Ease of use. Technology integration can be challenged by several factors to include perceptions, lack of training and support, and (Ok & Rao, 2017;). Previous research indicates that the Livescribe™ pen is easy to use with adequate training (Belson et al., 2013; Joyce, 2016). Students were asked in the post-intervention interview to respond to the statement, "It was easy to learn how to use the Livescribe™ pen

with training and instructions." Overall students responded positively (*M*=3.60), suggesting that students felt that the Livescribe™ pen was easy to use with training. Two students responded *neutral* to this statement. The students received training over two 50-minutes sessions, therefore, one reason for this response is that students could have felt that additional training was needed to fully acclimate to using the pen. Students also responded positively to the statement, "It was easy to use the Livescribe™ pen with the Cornell notetaking strategy to take notes," suggesting that students felt that it was easy to integrate the Livescribe™ pen and Cornell notetaking strategy during the notetaking process.

Conclusion

This research examined the impact of Cornell notetaking and the Livescribe™ pen on students' lecture comprehension and quality of notes. Immediate free call exercises, comprehension tests, and student notes were used to gather data on the impact of Cornell notetaking and the Livescribe™ pen students' notes. Few studies have investigated students' use of the Livescribe™ pen, specifically focusing on students' experiences and perceptions (Belson et al., 2013; Joyce, 2016; Ellis, 2016). The findings of this study are congruent with previous research suggesting that students have positive overall perceptions of the digital pens, such as the Livescribe™ pen. Students with disabilities view the Livescribe™ pen as being a positive contributor to their notetaking experience, especially in courses that rely on notetaking as a primary means of actively engaging in the course content (Ellis, 2016). The findings indicated that the Livescribe™ pen increased (a) student engagement, improved (b) note quality and (c) notetaking efficiency. In addition, the data analysis revealed perceptions of the Livescribe™ pen's overall (d) helpfulness and (e) ease of use.

Limitations

It should be noted that this study's small sample size limits its generalizability. Also, although the students had an entire 16-week semester to learn the Cornell notetaking system, they only had two weeks to work with the Livescribe™ pens before implementation of the observation. Extended training with the

pen might increase the observed effects of the pen on the students' notetaking ability. Additionally, notes from only one course, the reading strategies course, were used for analysis Samples from other courses would strengthen the analysis of the usefulness of this tool. Finally, direct causal relationships or comparisons between groups for our findings cannot be made, given the lack of a control group.

References

Abreu-Ellis, C., Ellis, J. & Hayes, R. (2009). College preparedness and time of learning disability identification. *Journal of Developmental Education, 32*(3), 28–38.

Akintunde, O. (2013). Effects of Cornell, verbatim & outline notetaking strategies on students' retrieval of lecture information in Nigeria. *Journal of Education & Practice, 4*(25), 67-74.

Badger, R., White, A., Sutherland, P. & Haggis, T. (2001). Note perfect: An investigation of how students view taking notes in lectures. *System, 29*, 405–417.

Baharev, Z. (2016). The effects of Cornell notetaking and review strategies on recall and comprehension of lecture content for middle school students with and without disabilities (Doctoral dissertation, Rutgers University-Graduate School of Education).

Bakunas, B. & Holley, W. (2001). Teaching organizational skills. *The Clearing House, 77*, 92–95.

Belson, S. I., Hartman, D. & Sherman, J. (2013). Digital note taking: The use of electronic pens with students with specific learning disabilities, *Journal of Special Education Technology, 28*(2), 13-24.

Boyle, J., Forchelli, G. & Cariss, K. (2015). Notetaking interventions to assist students with disabilities in content area classes. *Preventing School Failure, 59*(3), 186 - 195.

Boyle, J. R. & Joyce, R. L. (2019). Smartpen technology for note taking in inclusive English/language art classes. *Reading & Writing Quarterly*, *35*(6), 525-538.

Boyle, J. R. & Weishaar, M. (2001). The effects of strategic notetaking on the recall and comprehension of lecture information for high school students with learning disabilities. *Learning Disabilities Research & Practice, 16*(3), 133-141.

Chang, W. C. & Ku, Y. M. (2015). The effects of notetaking skills instruction on elementary students' reading. *Journal of Educational Research, 108*(4), 278–291.

Cutting, L. E., Materek, A., Cole, C. A. S., Levine, T. M. & Mahone, E. M. (2009). Effects of fluency, oral language, and executive function on reading comprehension performance. *Annals of Dyslexia, 59*(1), 34–54.

DaDeppo, L. M. (2009). Integration factors related to the academic success and intent to persist of college students with learning disabilities. *Learning Disabilities Research & Practice, 24*(3).

Dell, A. G., Newton, D. & Petroff, J. G. (2012). *Assistive technology in the classroom: Enhancing the school experience of students with disabilities*. Upper Saddle River, NJ: Pearson Merrill Prentice Hall.

Doughty, T. T., Bouck, E. C., Bassette, L., Szwed, K. & Flanagan, S. (2013). Spelling on the fly: Investigating a pentop computer to improve the spelling skills of three elementary students with disabilities. *Assistive Technology, 25*, 166–175.

Ellis, K.R. (2016). Students with disabilities' perceptions of assistive technology, the Livescribe™ smartpen, audio recording, and notetaking service accommodations. [Thesis]. California State University. https://dspace.calstate.edu/bitstream/handle/10211.3/171261/KELLIS%20Thesis%20FINAL.pdf?sequence=2

Englert, C.S., Mariage, T.V., Okolo, C.M. & Shankland, R.K. (2009). The learning-to-learn strategies of adolescent students with disabilities: highlighting, note taking, planning, and writing expository texts. *Assessment for Effective Intervention, 34*(3). 147-161. DOI:10.1177/1534508408318804

Estrada-Hernandez, N., Wheaton, J. E., Dawson, R. D. & Krispinsky, M. (2007). Current

status of assistive technology education in rehabilitation counseling programs. *Rehabilitation Education, 21*(2), 117-123.

Evers, R. & Spencer, S. (2007). *Planning effective instruction for students with learning and behavior problems*. Boston: Pearson.

Faber, J. E., Morris, J. D. & Lieberman, M. G. (2000). The effect of note taking on ninth grade students' comprehension. *Reading Psychology, 21*(3), 257–270.

Gajria, M., Jitendra, A. K., Sood, S. & Sacks, G. (2007). Improving comprehension of expository text in students with LD: A research synthesis. *Journal of learning disabilities*, *40*(3), 210-225.

Gregg, N. (2012). Increasing access to learning for the adult basic education learner with learning disabilities: Evidence-based accommodation research. *Journal of Learning Disabilities, 45*(1), 47-63.

Heiman, T. & Precel, K. (2003). Students with learning disabilities in higher education: Academic strategies profile. *Journal of Learning Disabilities, 36*, 248–258.

Henderson, C. (2001). *College freshmen with disabilities: A biennial statistics profile*. Washington, DC: American Council on Education, HEATH Resource Center.

Higgins, E. L. & Raskind, M. H. (2005). The compensatory effectiveness of the Quicktionary reading pen II on the reading comprehension of students with learning disabilities. *Journal of Special Education Technology, 20*, 31–40.

Hughes, C. A. & Suritsky, S. K. (1994). Note taking skills of university students with and without learning disabilities. *Journal of Learning Disabilities, 27*(20), 24.

Jitendra, A., Burgess, C. & Gajria, M. (2011). Cognitive strategy instruction for improving expository text comprehension of students with learning disabilities: The quality of evidence. *Exceptional Children, 77*(2), 135–159.

Johnson, I. (2008). Does the Oxford Reading Pen enhance reading accuracy and comprehension for students with reading difficulties in a classroom environment? An implementation trial. *Kairaranga, 9*, 36–43.

Joyce, R. L. & Boyle, J. R. (2019). Improving notetaking skills for students with disabilities through a smartpen intervention. *Journal of Special Education Technology*, 1 – 11.

Kiewra, K. A. (1985). Investigating notetaking and review: A depth of processing alternative. *Educational Psychologist, 20,* 23–32.

Kiewra, K. A. (1987). Notetaking and review: The research and its implications. *Instructional Science, 16*, 233–249. http://dx.doi.org/10.1007/bf00120252

Kobayashi, K. (2005). What limits the encoding effect of notetaking? A meta-analytic examination. *Contemporary Educational Psychology, 30*(2), 242-262.

LeBreton, J. M. & Senter, J. L. (2008). Answers to 20 questions about interrater reliability and interrater agreement. *Organizational Research Methods, 11*(4), 815–852. https://doi.org/10.1177/1094428106296642

Lee, P., Wang C., Hamman D., Hsiao C. & Huang C. (2013). Notetaking instruction enhances students' science learning. *Child Development Research*, (1), 1–8.

Skinner, M. E. & Lindstrom, B.D. (2003) Bridging the Gap between High School and College: Strategies for the Successful Transition of Students with Learning Disabilities. *Preventing School Failure, 47*, 132-137. https://doi.org/10.1080/10459880309604441

Madaus, J. W., Banerjee, M. & Merchant, D. (2011). *Transition to postsecondary education.* In J. M. Kauffman & D. P. Hallahan (Eds.), Handbook of special education (pp. 571–583). New York, NY: Routledge.

Martinez-Marrero, I. & Estrada-Hernandez, N. (2008). An instructional tool to assist college students with written language disabilities. *Tech Trends, 52*(1), 56-62.

Morehead, K., Dunlosky, J., Rawson, K.A., Blasiman, R. & Hollis, R.B. (2019). Notetaking habits of 21st century college students: Implications for student learning, memory, and achievement. *Memory, 27 (6*), pp. 807-819. https://doi.org/10.1080/09658211.2019.1569694.

Mortimore, T. & Crozier, W. R. (2006). Dyslexia and difficulties with study skills in higher education. *Studies in Higher Education, 31*, 235–251.

National Council on Disability. (2000). National disability policy: A progress report. Author, Washington, DC, Retrieved from http://www.ncd.gov/newsroom/publications/policy9899.html

National Joint Committee on Learning Disabilities. (2011). Learning disabilities: Implications for policy regarding research and practice – A report by the National Joint Committee on Learning Disabilities March 2011. *Learning Disability Quarterly, 34*(4), 237–241.

Ok, M. W. & Rao, K. (2017). Using a digital pen to support secondary students with learning disabilities. *Intervention in School and Clinic, 53*(1), 36-43.

Patton M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research, 34*(5 Pt 2), 1189–1208.

Pauk, W. (2000). *How to study in college*. Houghton Mifflin Company; New York.

Perelmutter, B., McGregor, K. K. & Gordon, K. R. (2017). Assistive technology interventions for adolescents and adults with learning disabilities: An evidence-based systematic review and meta-analysis. *Computers & Education, 114*, 139-163.

Peverly, S.T. (2006) The importance of handwriting speed in adult writing. *Developmental Neuropsychology, 29*, 197-216.

Piolat, A., Olive T. & Kellogg, R. (2005). Cognitive effort during note taking. *Applied Cognitive Psychology, 19*(3), 291–312.

Putnam, M. L., Deshler, D. D. & Schumaker, J. B. (1993). The investigation of setting demands: A missing link in learning strategy instruction. In L. J. Meltzer (Ed.), *Strategy assessment and instruction for students with learning disabilities: From theory to practice* (pp. 325–353). PRO-ED.

Reiff, H. B. (2007). *Self-advocacy skills for students with learning disabilities: Making it happen in college and beyond*. National Professional Resources Inc./Dude Publishing.

Ruhl, K. L. & Suritsky, S. (1995). The pause procedure and/or an outline: Effect on immediate free recall and lecture notes taken by college students with learning disabilities. *Learning Disability Quarterly, 18*(1), 2-11.

Saran, M., Krentz Gober, M. & McCarty, E.B. (2022). An introduction to the Cornell Note system. *Ear, Nose & Throat Journal. 2022; 0(0*). doi:10.1177/01455613221146457

Schuchardt, K., Maehler, C. & Hasselhorn, M. (2008). Working memory deficits in children with specific learning disorders. *Journal of Learning Disabilities*, *41*(6), 514-523.

Seid, A. & Teklay, H. (2018). Training improved the note taking skill of nursing students in Aksum University; northern Ethiopia: a classroom-based action research. *BMC Research Notes, 11*(1), N.PAG.

Shaffer, A. K. & Schwebach, J. R. (2015). Usefulness of Livescribe™ web recordings as supplemental resources for a large lecture undergraduate course. *Journal of College Science Teaching, 44*(4), 54-60.

Shankweiler, D. (1999). Words to meanings. *Scientific Studies of Reading, 3*, 113–127.

Siegel, J. (2023). Profiles in notetaking: A multiple case study. International Journal of Listening. DOI: 10.1080/10904018.2023.2168667

Siegel, J. (2022). Factors affecting notetaking performance. *International Journal of Listening*. DOI: 10.1080/10904018.2022.2059484

Sparks, R. L. & Lovett, B. J. (2014). Learning disability documentation in higher

education. *Learning Disability Quarterly*, *37*(1), 54–62.

Stodden, R. & Whelley, T. (2004). Postsecondary education and persons with intellectual disabilities: An introduction. *Education and Training in Developmental Disabilities, 39*(1), 6-15.

Suritsky, S. K. (1992). Notetaking approaches and specific areas of difficulty reported by university students with learning disabilities. *Journal of Postsecondary Education and Disability, 10*(1), 3–10.

Titsworth, B.S. (2004). Students' notetaking: the effects of teacher immediacy and clarity. *Communication Education, 53*(4), 305-320. https://doi.org/10.1080/0363452032000305922

Torgesen, K. L. (2000). Individual differences in response to early interventions in reading: The lingering problem of treatment resisters*. Learning Disabilities Research & Practice, 15*, 55–64.

Tsai-Fu, T. & Wu, Y. (2010). Effects of notetaking instruction and notetaking languages on college EFL students' listening comprehension. *New Horizons in Education, 58*(1), 120–132.

Weis, R., Dean, E. L. & Osborne, K. J. (2016). Accommodation decision making for postsecondary students with learning disabilities: Individually tailored or one size fits all? *Journal of Learning Disabilities, 49*(5), 484-498.

Wolf, L. E. (2001). College students with ADHD and other hidden disabilities. Outcomes and interventions. *Annals of the New York Academy of Sciences*, *931*, 385–395.

Wolf, M. & Katzir-Cohen, T. (2001). Reading fluency and its intervention. *Scientific Studies of Reading, 5*, 211–238.

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The Manosphere and Murder: A Theoretical Analysis of the Case of Alek Minassian

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The Manosphere and Murder: A Theoretical Analysis of the Case of Alek Minassian

Abstract

On April 23 2018, Alex Minassian used a rented moving van to perpetrate an act of public mass homicide in Ontario, Canada. Subsequent to his arrest, Minassian was interviewed, and the media undertook an investigation into the factors that contributed to this act of violence. What emerged from these sources were varying potential motivations or contributing elements that have been noted in the backgrounds of other perpetrators of mass violence. Yet media reports and many academic studies of mass violence tend to focus on single factor explanations. The exception is the work of Levin and Madfis (2009) who demonstrate that an accumulation of factors is often involved in an individual choosing to commit mass violence. The current study utilizes qualitative content analyses to build on the work on Levin and Madfis (2009). News articles as well as the interrogation transcript of Alek Minassian post-apprehension are examined. The analysis indicates that various criminological theories including general strain theory, differential opportunity theory, differential association theory, differential reinforcement theory, differential identification theory, and neutralization theory can explain the progression of Alex Minassian's behavior from a law-abiding citizen to perpetrator of mass homicide. The findings in this study can help inform the literature on the antecedents to mass violence.

Keywords: General strain; differential association; differential opportunity; differential reinforcement; differential identification; neutralization; hate online; gender-based hate

Introduction

Mass murder, though rare, is an issue that is not only considered a social problem, but one that receives significant media attention. Prior scholarship has focused on a wide range of factors that may predict mass violence. This includes the effect of online interactions (Schuchard, Crooks, Stefanidis, & Croitoru, 2019), media attention (Barbieri & Connell, 2015), violent media exposure (Huesmann, Rowell, & Taylor, 2006), the role of firearms (Lankford 2016), and mental illness (Rosenburg, 2014). While the predicting factors of mass acts of violence are still being debated in the academic literature (Donnerstein, 1993; Casoni & Brunet, 2007; Faccini & Allely, 2016; Allely & Faccini, 2017; Capellan, 2019; Parks et al., 2019), it is agreed that there is not a single factor explanation for these complex criminal acts (Cappellan, 2019; Casoni & Brunet 2007; Allely & Faccini, 2017; Parks et al., 2019). In addition, it is also agreed that while there may be commonalities among various incidents of mass violence in terms of contributing factors (Parks et al., 2019), each case is also unique. Some studies have applied criminological theories as a lens for predicting violence and others have developed integrated theoretical analyses to provide a "developmental pathways approach" to explain mass homicides (Levin & Madfis 2009; Hawdon, 2012). This study seeks to expand and build upon these theoretical approaches.

The goal of this research is to utilize criminological theory to explain precipitating and contributing factors, that alone cannot explain the actions of Alek Minassian during the Toronto Van Attack, but together can provide an integrated, theoretical picture of a progression of events across Minassian's life that culminated in his decision to commit an act of mass violence in the name of the Incel movement. This study seeks to provide a theoretical understanding of violence, specifically violence motivated by gender-based hate, utilizing various criminological theories including general strain, differential association, techniques of neutralization, differential opportunity, differential identification, and differential reinforcement applied to the case of the Toronto Van attacker Alek Minassian to analyze Minassian's pathway to mass murder.

***Who is Alek Minassian*?**

Alek Minassian was born on Nov. 3, 1992, in Richmond Hill, Ontario, Canada. Minassian grew up in a middle-upper class home with his parents and brother. At an early age, he was purportedly diagnosed with Asperger's Syndrome, now known as Autism Spectrum Disorder (Dempsey, 2018) a disorder that has core components related to significant deficits in social communication and interaction with others across multiple settings as a key criteria (CDC, 2019). This led to him being enrolled in specialized class environments while at school and some reports of difficulties in social interactions (Dempsey, 2018). However, Minassian graduated from high school and enrolled in Seneca College in pursuit of a computer programming degree where he was described by classmates as a nervous yet bright student and a fast learner who had a knack for computer programming (Dempsey, 2018). It was during his time at college that Alek reported having multiple social experiences that caused him to become frustrated with women. As a result, he found community and acceptance online in forums populated by a hate-group called Incels (Minassian, 2018). On April 23, 2018, at around 1:30 pm, Alek Minassian intentionally drove a rental van onto a busy sidewalk in Toronto, Canada killing 10 and injuring 16. According to police interviews, Alek had been planning this "beta uprising" for months. He sourced rental companies and schemed on what type of vehicle would do the most damage but also be maneuverable throughout the city. He drove the truck into the city, looking for targets. When he found a highly trafficked area, he committed to his plan. Once the vehicle stopped, he got out and pointed something at police. Eyewitness accounts and bystander videos captured the suspect holding the object like a handgun and daring the officer to kill him (Tait, 2018). According to interview transcripts from the Canadian police, Alek was attempting suicide by cop, but his attempts were not successful, and he was apprehended (Minassian, 2018). Because the apprehension of mass murderers is not common (Fridel, 2021), the apprehension of Minassian offers a rare opportunity to theoretically examine a living perpetrator of mass violence.

Theoretical Grounding

Chronic and Acute Strain

Studies have found that chronic strain during developmental time periods coupled with a lack of support system in the form of a social bond to significant others and institutions is a significant factor in the progression of violent mass homicide offenders (Levin & Madfis, 2009:1235; Meloy et al. ,2004). Acute strain, outlined by Levin and Madfis (2009), can be encapsulated within the arguments of general strain theory. This theory argues that an individual can experience strain in a variety of ways including failure to obtain a positive goal, the removal of a positive stimulus, and the addition of a negative stimuli. Further, the theory argues that individuals who experience strain and react with anger in the absence of coping mechanisms are at increased risk of engaging in deviant actions (Agnew, 1992).

Differential Opportunity Theory

Differential opportunity theory acknowledges the influence of "opportunity" to engage in deviance, as a main predictor of deviance. This theory was originally developed to explain access to criminal subcultures among those cut off from the mainstream economy (Cloward & Ohlin, 1994) but it can be utilized to explain entry into the manosphere, as a result of being cut off from other types of status in society, in this case masculinity. In most societies, gender roles and gender role socialization follow an essentialist approach which encourages masculinity among men and femininity among women. For men, executing this role appropriately means that they should be strong, aggressive, and should exhibit sexual prowess or at least sexual success with women (Bullough & Bullough, 1993; Gagnon & Parker, 1995; Zilbergeld, 1999). When men cannot achieve that "masculine" status, strain occurs. When strain occurs, opportunities to achieve status in illegitimate ways become more appealing. In these opportunities, ideas are shared, introductions ae made, and new worldviews are formed.

Social Learning Theory

In addition to strain and opportunity theory, social learning theories can be a useful theoretical framework to examine the social processes that occur during the radicalization process. Differential association theory argues that individuals learn attitudes, values, and beliefs through interactions with significant others, a significant source of which is peers. Further, this theory argues that these interactions lead to the learning of drives, motivations, techniques, and rationalizations for criminal and deviant behavior, and that associations vary in frequency, duration, priority, and intensity (Sutherland & Cressey, 1974). Further, in the original version of differential association theory it is outlined that in interaction individuals learn the motivations and rationalizations of criminal behavior (Sutherland & Cressey, 1974). This statement of the theory was expanded upon by Sykes and Matza (1957) who argued that rationalizations or neutralization take five specific forms: denial of responsibility, denial of harm, denial of the victim, appeal to higher loyalties, and condemnation of the condemners. Studies of multiple murderers have found that these types of offenders often employ neutralizations in their interpretations of their crimes (Castle & Hensley, 2002; James & Gossett, 2018; James, 2019)

Differential identification theory extends Sutherland and Cressey's arguments by positing that exposure alone to definitions favorable to crime, regardless of frequency, duration, priority, and intensity, are not enough to lead an individual to adopt criminal values and behavior, instead, the individual must identify with, respect, or wish to be like the individual in question (Glaser, 1960). Studies have highlighted the role of identification with perpetrators through reports in the mass media in providing the inspiration for subsequent acts of mass violence (Cantor et al., 1999; Towers et al., 2015; Murray, 2017).

Additionally, Akers (1994) incorporate the idea of differential reinforcement theory in the learning process. This theory, an extension of differential association theory adds the concepts of rewards and punishments to explain how individuals learn behavior, arguing that those behaviors or ideas that receive reinforcement are more likely to be engaged in or repeated and those behaviors that receive punishment

are less likely to be engage in and repeated (Akers, 1994). Research examining the impact of reinforcement and punishment in online interactions has found that youth shaping their identities online constantly craft and shape their identities and attitudes based upon the online feedback that they receive (Hawdon, 2012).

The theories noted above lay the theoretical framework for this unique case study and will be elaborated on and applied in the results section below.

Data and Methods

The data for this study comes from two sources. First, to obtain biographical information on the perpetrator Alek Minassian an analysis of news articles related to the Toronto Van Attack and Alek Minassian published in the week following the event. This time frame was selected as Schildkraut (2014) found that in the first week after a mass homicide event, the media tends to focus their attention on the perpetrator and in the time period after this focus shifts to victims, memorials, and other commentary related to the event. To obtain this data, a search in Nexis Uni was conducted using the search term "Alek Minassian" and limiting the returns to articles published between April 23rd, 2018 and April 30th, 2018. The search result returned a total of 3,305 articles. The search was then limited to articles published in English only and to eliminate any repeated articles. This resulted in a return of 2,540 articles. This return was again cleaned to focus only on articles that specifically addressed biographical information related to Alek Minassian. Thus, titles that includes "what we know" and "who is" Alek Minassian were selected and others that reviewed the attack in general, the arrest, court appearances, charges, focus on victims, memorial services, prevention of future attacks, and focus on the Incel movement in general were deleted from the sample. This results in a final return of 88 articles. These articles form the basis of the content analysis to build a personal profile of the offender prior to his arrest. Second, the transcript of the police interview with Minassian was utilized. After the arrest of Minassian, a four-hour interview was conducted

by Detective Robert Thomas of the Toronto Police Sex Crimes Polygraph Unit. As a result of a court challenge entered by various media outlets, the video recorded interview between Detective Thomas and Minassian was released (Westoll, 2019) and was subsequently transcribed into a 190-page text document (Minassian 2018).

Methods

A qualitative content analysis utilizing a deductive analytic approach of selected news articles and the transcript of the interview with suspect Alek Minassian was conducted. First, the analysis of news articles was conducted to determine if any precipitating factors in the background of Minassian that have been documented in previous research on mass violence were present as Minassian largely refused to answer personal background questions during the interrogation. Inter-rater reliability of the analysis and categorization of articles was utilized to ensure validity of observations. Second, a qualitative analysis of the interview transcript utilized a deductive analytic approach and inter-rater reliability of the analysis. This was to ensure the validity of observations in relation to categorization of statements made by Minassian, in relation to criminological theories. An informative theoretical narrative examining the progression of Minassian from schoolboy to killer is presented (see Appendix 1).

Theoretical Application, Literature, and Results

Precipitating Factors and Chronic Strain: Early Psychological Factors and Social Support Systems

During the interview with police, Minassian was questioned as to whether or not he had a history or current experience with mental health issues. Detective Thomas further indicates that he has received information that during his school years Minassian was identified as a student with “special needs” and placed in a classroom for special needs students (Minassian, 2018:47:52-53). As Minassian refuses to respond to this line of questioning, it was necessary to turn to the content analysis of news articles to provide information related to the psychological profile of the subject. In these articles, a diagnosis of

Asperger's Syndrome, now classified as Autism Spectrum disorder is indicated (Grimaldi, 2018) and interviews with neighbors, former classmates, and teachers indicate that he was considered to be a socially awkward individual who acted "oddly" including avoiding eye contact, licking his collar, meowing, and biting others (Humphreys & Edmiston, 2018). In addition, it was recalled that he would often throw tantrums at school when overwhelmed (Dempsey, 2018). However, it was noted that while Minassian did stand out for his strange behavior, that he was never known for being intentionally violent (Grimaldi, 2018) and that his behaviors at this time were more in line with self-regulating behaviors associated with Autism Spectrum Disorder (Dempsey, 2018). Prior to the attack he had no prior criminal record (Robson & Bucktin, 2018). While the media tends to search for a single factor explanation for mass violence and the mental health of subjects often is a scapegoat for explaining these crimes (McGinty et al. 2014), a vast body of academic literature refutes the idea that mental illness is a cause of violent crime (Monahan, 1992; Hiday, 1995; Arbolda-Florez & Crisanti, 1998; Silver, 2006; Markowitz, 2011). Thus, while his mental health may have contributed to his actions indirectly, it alone was not the cause of the violent act.

Studies have found that chronic strain during developmental time periods (as evidenced by Minassian's mental health condition and this condition's impact on his social interactions), coupled with a lack of support system in the form of a social bond to significant others and institutions is a significant factor in the progression of violent mass homicide offenders (Levin & Madfis, 2009:1235; Meloy et al., 2004). Information obtained from the analysis of the news articles and the interview indicate that Minassian did have some forms of positive social support and social control in his life but that other significant areas, especially in the social interactions area, were weak or absent.

In regard to prosocial support, it is noted that Minassian has a positive relationship with his family. When questioned about his relationship across his life with his mom, dad, and brother and whether or not they have been supportive, Minassian replies to the Detective that they have been good and that yes, his family has been supportive (Minassian, 2018:50:73). This finding is corroborated in the analysis of news

articles which indicate that he has a positive relationship with his parents who sought help for their son by enrolling him in an educational program for special needs kids called Helpmate (Perreaux, 2018). It is also evident that Minassian performed well academically at school. For example, in the interview, Minassian highlights that he received high marks during his last year of high school at Thornlea Secondary, graduated, and, after a brief enlistment in the Canadian Armed Forces, he enrolled in a four year computer programming degree program at Seneca College and had completed all of his course work prior to the attack and had, during his educational time at Seneca successfully worked for various IT firms and on projects at the university in application development (Liam, 2018). Thus, in terms of family and education, there appear to be prosocial support systems in place.

Despite positive influences of the family and his educational achievements, there is evidence that other systems of support were weak or absent. For example, from the news articles it is indicated that attachment to peers was largely absent in Minassian's life. It was reported that he often had difficulty in communication with others, appeared to be a "loner", and at school he had no friends (Robson & Bucktin, 2018). As a result, he centered his social activities on activities such as online gaming that could be accomplished singly rather than in a group setting. In the interview, Minassian highlights that he was an avid video gamer and would consider himself a "hard core gamer" playing upwards of five hours per day, even with a heavy course load at his university (Minassian, 2018:66). Minassian indicated during the interview a preference for violent video games that he utilized to "get his frustrations out" (Minassian, 2018:65), however it should be noted that research has firmly established that there is no direct link between the consumption of violent media and violent crime (Ferguson et al., 2008; Ferguson, 2011; Markey et al., 2015) but that with other precipitating factors present this can play a role in the progression of violence. His struggles to interact with people are further highlighted by his inability to succeed within the Canadian Armed Forces which he joined upon graduation because he "was interested in ah learning how to ah use ah weapons… sp – specifically ah large guns… Such as ah assault rifles." (Minassian, 2018:60-

63). Information from news articles indicates that he only lasted two months as he had trouble adjusting to the structure of the army and following orders (Dempsey, 2018). It seems that his peer relationships and other social interactions were significantly impacted during his formative years. As a result, his only significant form of interaction outside of the family largely took place online and this interaction was not prosocial but instead served to provide positive definitions for his negative views towards women and society (Mezzofiore, 2018).

The previous section has summarized the chronic strains which impacted Minassian's early life and subsequent social interactions. The next section turns to compounding factors or "acute strains" (Levin & Madfis, 2009:1235) at later points in his life that must be considered as contributing to the development of this mass homicide offender.

General Strain Theory: Goal Attainment, Negative Life Experiences, Anger and Lack of Coping Mechanisms

The acute strain, outlined by Levin and Madfis (2009), experienced by Minassian can be encapsulated within the arguments of general strain theory. From the police interview transcript, it is evident that a significant goal in Minassian's life was to have a relationship with a woman or women. When asked about girls in general, Minassian responds that he is "attracted to them" (Minassian, 2018:75). Returning to this line of questioning later in the interview, the Detective asks Minassian if he went to prom and if he has ever been in a relationship or had an intimate experience with a woman to which Minassian responds no and unfortunately not (Minassian 2018). Probing further into his relationships with the opposite sex, the Detective highlights the acute strains, or "negative experiences" related to his relationship with women that had a significant impact on Minassian. The first occurred in 2012 when Minassian indicated that he asked a girl out on a date and was rejected (Minassian, 2018) and the second occurred during a Halloween party at college in 2013. When asked what happened during that incident, Minassian replied:

> "...and I ah walked in and attempted to ah socialize with some ah girls, ah however they all ah laughed at me and ah held the arms of the ah big guys instead…. I felt, ah very angry that they would, because I consider myself a supreme gentleman … I was angry that that they would uhm give their love and affection to obnoxious brutes… I ah started thinking that it's unfair that uhm ce – certain ah guys will not get any ah love and affection from girls….. Such as me that are ah that are very nice and ah acting gentlemanly "(Minassian 2018:79-81).

At this point, Minassian had experienced a significant acute negative event to which he reacted poorly, becoming angered and saddened. Further, he was unable to cope with the rejection due to his poor mental health and lack of prosocial support. However, again, this alone was not enough to lead to the development of a killer. At this stage, his experience was personal and not social, a failing on his part to obtain a relationship with women. It was his entry into an online community that espoused gender-based hate that re-defined this situation and provided the impetus for the development of a mass killer.

Introduction to the Incel Subculture

The Incel subculture provided a re-definition of worldview towards the externalization of Minassian's experiences and feelings relative to them. This particular form of gender-based hate can be traced by to the early days of the Men's Rights Movement (Kimmel, 1995; Bean, 2007; Messner, 1998). With the advent of the internet, this subcultural, hate ideology spread to technological platforms and has become known as the "manosphere". Here diverse number of groups such as men going their own way (MRA's), Involuntary Celibates (Incels), father's rights activists, pickup artists, and others, spread a common ideology that is centered on views that feminist values have come to dominate society in such ways that men and masculinity are threatened with obliteration. Further, their goal is to fight back against this cultural and social change (Lilly 2016; Schmitz & Kazyak, 2016; Marwick & Lewis, 2017). The Incel movement was originally started as an online support group by an adolescent named Alana from Toronto, Canada in 1997 (Ging, 2017) as a place where individuals who were struggling to obtain and maintain positive romantic relationships could gather in a safe space and interact. The original founder of the platform eventually abandoned her role as moderator leaving the website to those who had joined the

subcultural, online movement (Ging, 2017). While some maintained the positive, supportive environment that Alana originally intended for the website, a more extreme element penetrated this platform. This extreme element began to blame women and "normies," a term used to describe conventionally attractive men, for their celibacy (Ging, 2017; Bou-Franch & Garcés-Conejos, 2016). Members associated with this more extreme element were individuals that would go on to go on to perpetrate acts of mass violence including Elliot Rodgers, Christoper Harper-Mercer, and later, Alek Minassian (Baele et al., 2019; Macklin, 2019; Marganski, 2019).

Differential Opportunity Theory and Differential Association Theory

Minassian's entry into the online Incel subculture can be explained through differential opportunity theory. In the previous section, it is noted that Minassian experienced strain as a result of his failure to obtain romantic and sexual relationships with women. The opportunity to interact with individuals who defined this failure from a perspective that is misogynistic and filled with hateful rhetoric was provided by an individual who was acquainted with Minassian and was already interacting in these online forums. As quoted in the police interview Minassian stated that he first interacted on this site [4Chan] in 2014 and that he "was informed about it ah by a friend at college (Minassian, 2018:84)."

It was on these sites that Minassian found a way to reinterpret his situation and shift the blame from himself to specific social groups. He found a group of peers online that led to the development of a new worldview. This redefinition of worldview can best be understood through the framework of differential association theory. Previous research has found that online communities have become important peer sources for the younger generations and that they have a significant impact on those who interact on them (Lehdonvirta & Räsänen, 2011). Further, Hawdon (2012) specifically applied this theory to interactions in online hate groups and found youth in online hate groups see other members as peers, that posts on the sites provide members with the attitudes towards that group, that these groups frequently contains posts that provide the motives for, rationalizations of and techniques for hate-

inspired violence, and finally that as individuals interact more frequently in these online communities the intensity of their associations increases. While Hawdon's (2012) use of differential association theory was written about hate crime websites in general, the theory applies specifically to the case of Minassian as well. For example, Minassian describes to the Detective that on 4Chan he frequented three anonymous message boards: RB (Random Board), POL (Politically Incorrect), and R9K (R Nine Thousand) to chat with similar minded people. He later references the specific content of discussion that he sought in which interactions included "Ah the topic is usually ah frustrations that an inability to lose one's virginity specifically for young males" (Minassian, 2018:81-84) and that he specifically avoided the other 50 plus messaging boards on 4Chan because the content was not to his liking, and he had been deleted by the moderators of these boards. In addition, he indicates that these three boards were preferable to him because he "I talked with them was just because I enjoyed their, ah style of ah conversation…. Ah it was very ah blunt and honest" (Minassian, 2018:81-84). Thus, in these groups Minassian found a peer group to whom he felt attached and connected to.

Further, in these groups, messages were provided to Minassian that shaped his attitudes towards women and "normies." The following exchange between Detective Thomas and Minassian illustrates the content of the Incel terminology and attitudes towards "out groups" that were learned by Minassian through his peer interactions online:

> **THOMAS:** So wh – what would it be, what would it typically focus around or what would they – what would the typ – typical conversations contain? **MINASSIAN:** Ah red pill truths about ah why ah women ah choose to date obnoxious men. **THOMAS:** Date the Chads. **MINASSIAN:** Yeah. **THOMAS:** The Chads of this world. **MINASSIAN:** Yeah ---**THOMAS:** Yeah, yeah, and yeah. **MINASSIAN:** Basically the Stacey's going for the Chads. **THOMAS:** Exactly, the Stacey's are the yeah the yeah the dizzy dumb girls dating ah the goofy you know jocks. **MINASSIAN:** Yeah. **THOMAS:** Right, right, right, right so you call them Stacey's and Chads. **MINASSIAN:** Yeah. **THOMAS:** I've, I've heard that term before. Ah and so that's in the alt-right? **MINASSIAN:** Yes. **THOMAS:** That conversation takes place in the alt-right as well? **MINASSIAN:** Yes. **THOMAS:** Ah does – do other things take place in the alt-right ah forum --- **MINASSIAN:** Uhm ---**THOMAS:** --- or red pill. **MINASSIAN:** Ah some, some, and some ah uhm alt-right members consider them to do – those cells to be ah red pilled. **THOMAS:** What does that mean is that like a matrix ah reference? **MINASSIAN:** Actually it is in fact – that term was actually in fact uhm ah came up as a reference to matrix ---**THOMAS:** Right. **MINASSIAN:** --- taking the red – you can either take the red pill or

> you can take the blue pill. **THOMAS:** Right. **MINASSIAN:** And some of the – some alt-right members even consider them to be supposed to be ah black pill which in ess – in in essence means they are ah MGTOW, "Men Going Their Own Way." **THOMAS:** Oh okay, alright okay, alright okay. You alright? **MINASSIAN:** Yup. **THOMAS:** Okay so it's so the conversations are surrounding ah – so in those three message boards they're all basically the s – or maybe not I shouldn't say all three but in the two message boards the alt-right and the --- **MINASSIAN:** R9K. **THOMAS:** R9K there --- **MINASSIAN:** And we call ourselves the space robots there. **THOMAS:** Space robots, but the conversations tend to be focussed around uhm ah fellows who have ah been unable to lose their virginity due to the Stacey's of this world with Chads. **MINASSIAN:** Yes. **THOMAS:** Right and ah I I've done a little bit of uhm ah reading and I know a little about uhm involuntary ah ---**MINASSIAN:** Celibacy. **THOMAS:** --- cel – celibacy, right being celibate --- **MINASSIAN:** Yes. **THOMAS:** --- involuntary celibate. What does that mean? **MINASSIAN:** That means in – celibacy means ah, ah someone who had never before has sexual intercourse. **THOMAS:** Right. **MINASSIAN:** Ah involuntary celibacy means this wasn't your choice who --- **THOMAS:** I see. **MINASSIAN: ---** essentially are ah, have been thrown into true force loneliness and you're unable to lose your virginity. **THOMAS:** Right. **MINASSIAN:** This is especially ah painful for ah young males (Minassian 2018:87-91).

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In the interview with Detective Thomas, there is evidence that through his interactions in this online community Minassian developed the rationalizations of denial of responsibility (the blame for his actions lies outside of himself), denial of the victim (the victims brought their victimization upon themselves), and finally appeal to higher loyalties (that the actions are tied to a larger cause) (Sykes & Matza, 1957).

First, in regard to denial of responsibility, Minassian blames his actions on others, specifically the "Chads" and "Stacys" and "normies" have suppressed the Incels and as a result their beliefs and actions are being caused by these individuals as the Incels simply want "level the playing field" (Minassian, 2018:108). Second, Minassian blames the victims, both those who have been denigrated online and those who were attacked and killed by Incels including himself. When asked about the people he wanted to kill he indicated the "Chads and Stacy's who do not wish to give their love and affection to the Incels." (Minassian, 2018:109). In this statement he is blaming them for their own fate as they "refused" to give love and affection and as a result deserve the violence that has been aimed at them. Finally, there is a significant focus on the appeal to higher loyalties, specifically an adherence to the Incel group and advancing their mission. Minassian states that the entire time he is in the van perpetrating the attack he

is only focused on the fact that to him this is the day of retribution. He further states that "That's the only thing that's in my mind, it's just burning in my mind."(Minassian, 2018:155). In several other areas of the interview, Minassian indicates that his actions were carrying the message that Incels cannot be oppressed and that his actions will inspire the future "masses" to join him in the uprising, and that he feels that he "accomplished his mission." (Minassian, 2018:103:128:132).

The entry into the online community was a significant turning point for Minassian. He found individuals who had had experiences similar to his and these groups provided him with a new way of thinking about his troubles with the opposite sex, as an external problem caused by others. While at first this group acted as a support system or peer group only for Minassian, he found individuals within these online communities that he liked and respected more than the general posters he had encountered. These individualized were radicalized Incels who sought to enact violence and revenge on those who they perceived to have wronged them. To Minassian, these individuals were his idols. Thus, an extension of differential association theory can be used to explain the movement of Alek Minassian from an Incel member to a radicalized Incel member.

Differential Identification Theory

In an extension from pure association, identification with "deviants" increases the likelihood that harmful ideas will be transmitted from the deviant to the subject. This phenomenon is present in the case of Minassian. As Minassian interacted in the online Incel community, he met and corresponded with two radicalized individuals, both of whom went on to perpetrate mass homicide events in the name of Incels, Elliot Rodger and Christopher Harper-Mercer. When asked by the Detective when he first went onto 4Chan, Minassian was able to provide a very specific date, May 23, 2014. The detective probed to find out how Minassian was able to remember the specific date to which Minassian replied,

...Because I remember that was a ah very significant day…. Ah that was when ah Elliot Rodger ah decided to essentially ah commit an uprising – a beta uprising if you will ---….--- against the ah Chads and

the Stacey's…. Although he didn't ah call it a beta uprising at the time ah someone else who was inspired by him by the name of ah Chris Harper-Mercer called it a beta uprising some time in ah –actually I believe it was October 1 ah 2015…..[Elliot Rodger] : Basically the fa – the founding forefather ---….--- he founded the entire movement (Minassian, 2018:91-105).

When asked how he learned of Elliot, Minassian indicates that they moved to a private messaging system on 4Chan after Minassian saw one of his posts on a message board, indicating that these interactions in the messaging system allowed them to "ah and ah we just talked about each other and got to know each other" (Minassian, 2018:111-112) and indicating that "we found each other very interesting. We both had the same ah frustrations that society" (Minassian, 2018:112). Minassian is then asked how he felt when he learned of the mass act of violence committed by Rodgers to which he replies, "I felt kind of ah proud of him for ah his acts of bravery." (Minassian, 2018:116) While Minassian associated with many like-minded individuals on the general messaging board, he found in Rodgers a radicalized individual whom he respected and admired and as a result, he accepted Rodger's definitions of reality more readily than others. In fact, he encouraged Rodgers and Rodgers encouraged him and in this feedback loop of encouragement the final step towards mass violence was taken.

Differential Reinforcement Theory

The final theoretical element to this progression is differential reinforcement theory. In this case, reinforcement is a crucial concept as Minassian not only offered reinforcement to Rodgers but reinforcement also as escalated Minassian from an online participator to an individual who perpetrated mass violence. For example, Minassian indicates that on May 20th Rodgers indicated to him that he must go on a very important mission and that Minassian wished him luck on this mission and that Rodgers told him "That ah other members of ah, ah 4Chan were giving him ah encouraging support so that he would have the courage to ah start his rebellion." (Minassian, 2018:115) As he interacted with Rodgers and later watched the support given to Rodgers in the Incel community, Minassian noted "I was starting to feel ah

radicalized at that time…Meaning I felt it was time to take action and not just sit on the side lines and just ah fester in my own sadness" (Minassian, 2018:117). Thus, the reinforcement received in the online Incel community led not only to the encouragement of Rodgers initial act, but responses to Rodgers act provided support and reinforcement for Minassian to no longer remain a bystander. Further, his online posts prior to his own violent act were met with positive reinforcement as well. Minassian states, "I was using a code language to avoid ah detection by the authorities. I was – I stated that there will be a beta uprising tomorrow, I encourage others to ah follow suit" (Minassian, 2018:131). When asked if anyone responded he noted, "Yes ah, ah quite a few people ah were ah congratulating me ah because I suspect they probably knew what I meant by what I said." (Minassian, 2018:131). It was this final component combined with all previous experiences that led Minassian to choose to engage in an act of mass violence. Each component individually is not sufficient to explain his actions but the culmination of his experiences can provide insight into the motivation for Minassian's actions.

Discussion

In this paper, an integrated theoretical model has been presented to explain the actions of Alek Minassian on April 23rd, 2018, when he committed an act of mass violence in Toronto, Canada. While the arguments presented in this paper are meant to explain in detail the progression of Alek Minassian from an individual who, though deemed "odd", was thought by many to be incapable of committing this type of violence, the reasoning provided in this document can help inform studies of other types of mass violence, particularly those that involve individuals who interact in hate based online communities such as the Incel community. The impact of interaction in these environments on not only the thought processes of individuals but also the behavior of individuals is an area that deserves future research attention as hate-based websites have increased their focus on recruiting youth. The internet, unregulated as it is (Costello & Hawdon, 2018), has become a home to a growing number of websites,

blogs, and message boards devoted to the production of hate-based material and the recruitment of like-minded individuals. While the vast majority of individuals who interact in these areas online will not engage in violence, the potential exists for this to occur among those who identify with and find reinforcement from the actions of the more radicalized elements of these movements. As Minassian stated when replying to the Detective concerning responses to his online post prior to committing the act, "And in fact ah I remember there was one poster who said he was from Edmonton and he would be planning a similar uprising in November ah 15 of this year." (Minassian, 2018:131).

Declaration of Interest

No financial interest of benefit has arisen from the direct applications of this research.

References

Akers, R. (1994). *Criminological Theories: Introduction and Evaluation.* Los Angeles: Roxbury.

Allely, C., and Faccini, L. (2017). Path to Intended Violence Model to Understand Mass Violence in the Case of Elliot Rodger. *Aggression and Violent Behavior 37*: 201-209. doi: 10.1016/j.avb.2017.09.005.

Arboleda-Florez, J., Holley, H., and Crisanti, A. (1998). Understanding Causal Paths between Mental Illness and Violence." *Social Psychiatry and Psychiatric Epidemiology 33*(1): S38-S46.

Barbieri, N., and Connell, N. (2015). A Cross-National Assessment of Media Reactions and Blame Finding of Student Perpetrated School Shootings. *American Journal of Criminal Justice*, *40*(1): 23-46.

Bean, K. (2007). Post-Backlash Feminism: Women and the Media since Reagan-Bush. Jefferson, NC: McFarland.

Baele, S., Brace, L., and Coan, T. (2019). From "Incel" to "Saint": Analyzing the Violent Worldview behind the 2018 Toronto Attack. *Terrorism and Political Violence*: 1-25. doi: 10.1080/09546553.2019.1638256.

Bou-Franch, P., and Blitvich, P. (2016). Gender Ideology and Social Identity Processes in Online Language Aggression against Women. *Exploring Language Aggression against Women*: 59-81. Edited by Patricia Bou-Franch. Amsterdam/Philadelphia: John Benjamins.

Bullough, V., and Bullough, B. (1993). *Cross-dressing, Sex, and Gender*. Philadelphia: University of Pennsylvania Press.

Cantor, C., Sheehan, P., Alpers, P., and Mullen, P. (1999). Media and Mass Homicides." *Archives of Suicide Research 5*(4): 285-292. doi: 10.1023/A:1009637817185

Capellan, Joel. 2019. "Looking Upstream: A Sociological Investigation of Mass Public Shootings." Pp. 99-128 in *Assessing and Averting the Prevalence of Mass Violence.* IGI Global.

Casey, Liam. 2018. "Accused in Rampage was Looking for Job; Had Applied to IT Recruitment Agency." *National Post,* April 27. Retrieved on October 19, 2019. (https://advance-lexis-com.proxy.longwood.edu/api/document?collection=news&id=urn:contentItem:5S6B-F2D1-DY2T-602R-00000-00&context=1516831).

Casoni, Diane, and Louis Brunet. 2007. "The Psychodynamics that Lead to Violence: Part 2: The Case of "Ordinary" People Involved in Mass Violence." *Canadian Journal of Psychoanalysis* 15(2): 261-280.

Castle, Tammy, and Christopher Hensley. 2002. "Serial Killers with Military Experience: Applying Learning Theory to Serial Murder." *International Journal of Offender Therapy and Comparative Criminology 46*(4): 453-465.

Cloward, Richard, and Lloyd Ohlin. 1994. *Differential Opportunity and Delinquent Subcultures.*

Coletta, Amanda. 2018. "Toronto Police say 10 Dead, 15 Injured after Van Struck Pedestrians in Toronto; Driver in Custody." *The Washington Post.* Retrieved January 20, 2020(https://www.washingtonpost.com/world/the_americas/van-plows-into-pedestrians-in-toronto-injuring-several/2018/04/23/adb56a62-4726-11e8-8082-105a446d19b8_story.html).

Costello, Matthey, and James Hawdon. 2018. "Who Are the Online Extremists Among Us? Sociodemographic Characteristics, Social Networking, and Online Experiences of Those Who Produce Online Hate Materials. *Violence and Gender 5*(1): 55-60. doi:10.1089/vio.2017.0048.

Dempsey, Amy. 2018. "Inside the Life of Alek Minassian, the Toronto Van Rampage Suspect no one

Thought Capable of Murder" *The Hamilton Spectator,* May 14. Retrieved January 8, 2020. (*spec.com/news-story/8605039-inside-the-life-of-alek-minassian-the-tor onto-van-rampage-suspect-no-one-thought-capable-of-murder/).

"Diagnostic Criteria: Autism Spectrum Disorder (ASD)." Retrieved on October 20, 2019. (https://www.cdc.gov/ncbddd/autism/index.html).

Donnerstein, Edward. 1993. "Mass Media Violence: Thoughts on the Debate." *Hofstra Law Review* 22: 827.

Faccini, Lino, and Clare Allely. 2016. "Mass Violence in Individuals with Autism Spectrum Disorder and Narcissistic Personality Disorder: A Case Analysis of Anders Breivik Using the "Path to Intended and Terroristic Violence" Model." *Aggression and Violent Behavior* 31: 229-236. doi: 10.1016/j.avb.2016.10.002.

Ferguson, Christopher. 2011. "Video Games and Youth Violence: A Prospective Analysis in Adolescents." *Journal of Youth and Adolescence* 40(4): 377-391. doi: 10.1007/s10964-010-9610-x.

Ferguson, Christopher, Stephanie Rueda, Amanda Cruz, Diana Ferguson, Stacey Fritz, and Shawn Smith. 2008. "Violent Video Games and Aggression: Causal Relationship or Byproduct of Family Violence and Intrinsic Violence Motivation?" *Criminal Justice and Behavior 35*(3): 311-332. doi: 10.1177/0093854807311719.

Gagnon, John, and Richard Parker, eds. 1995. *Conceiving Sexuality: Approaches to Sex Research in a Postmodern World*. New York: Routledge.

Fridel, E. E. (2022). Integrating the literature on lethal violence: A comparison of mass murder, homicide, and homicide-suicide. *Homicide studies*, 26(2), 123-147.

Glaser, Daniel. 1960. "Differential Association and Criminological Prediction." *Social Problems* 8(1): 6–14.

Grimaldi, Jeremy. 2018. "Update: Alleged Attacker Alek Minassian may have Asperger syndrome." *Richmond Hill/Thornhill Liberal,* April 25. Retrieved September 18, 2019. (https://advance-lexis-com.proxy.longwood.edu/api/document?collection=news&id=urn:contentItem:5S6H-CD61-F105-62Y9-00000-00&context=1516831).

Hawdon, James. 2012. Applying Differential Association Theory to Online Hate Groups: A Theoretical Statement. *Journal of Research on Finnish Society* 5: 39-47.

Hiday, Virginia. 1995. "The Social Context of Mental Illness and Violence." *Journal of Health and Social Behavior* 36: 122-137. doi: 10.2307/2137220.

Huesmann, L. Rowell and Laramie D. Taylor. 2006. "The Role of Media Violence in Violent Behavior." *Annu. Rev. Public Health* 27: 393-415.

Humphreys, Adrian, and Jake Edmiston. 2018. "Toronto Van Attack Suspect Alek Minassian's Interest in 'Incel' Movement the Latest Sign of Troubled Life." *Postmedia Breaking News,* April 25. Retrieved on October 20, 2019. (https://advance-lexis-com.proxy.longwood.edu/api/document?collection=news&id=urn:contentItem:5S5W-BJD1-JDK3-94YS-00000-00&context=1516831).

James, Veronyka. 2019. "Denying the Darkness: Exploring the Discourses of Neutralization of Bundy, Gacy, and Dahmer." *Societies 9*(2): 46. doi: 10.3390/soc9020046.

James, Veronyka, and Jennifer Gossett. 2018. "Of Monsters and Men: Exploring Serial Murderers' Discourses of Neutralization." *Deviant Behavior 39*(9): 1120-1139. doi: 10.1080/01639625.2017.1409980.

Kimmel, Michael. 1995. "*The Politics of Manhood: Profeminist Men Respond to the Mythopoetic Men's Movement (and the Mythopoetic Leaders Answer).* Philadelphia, PA: Temple University Press.

Lankford, Adam. 2016. “Public Mass Shooters and Firearms: A Cross-National Study of 171 Countries.” *Violence and Victims* 31(2): 187-199.

Lehdonvirta, Vili, and Pekka Räsänen. 2011. “How do Young People Identify with Online and Offline Peer Groups? A Comparison between UK, Spain and Japan.” *Journal of Youth Studies 14*(1): 91-108. doi: 10.1080/13676261.2010.506530.

Levin, Jack, and Eric Madfis. 2009. “Mass Murder at School and Cumulative Strain: A Sequential Model.” *American Behavioral Scientist* 52(9): 1227-1245. doi: 10.1177/0002764209332543.

Lilly, Mary. 2016. “‘The World is Not a Safe Place for Men’: The Representational Politics of the Manosphere.” Master’s thesis, Political Science. Université d’Ottawa/University of Ottawa.

Macklin, Graham. 2019. “The Christchurch Attacks: Livestream Terror in the Viral Video Age.” *CTC Sentinel* 12(6). Retrieved on October 19, 2019. (https://ctc.usma.edu/christchurch-attacks-livestream-terror-viral-video-age/).

Marganski, Alison. 2019. “Making a Murderer: The Importance of Gender and Violence against Women in Mass Murder Events.” *Sociology Compass* 13(9). doi: 10.1111/soc4.12730

Markey, Patrick, Charlotte Markey, and Juliana French. 2015. “Violent Video Games and Real-world Violence: Rhetoric versus Data.” *Psychology of Popular Media Culture* 4(4): 277-295. doi: 10.1037/ppm0000030

Markowitz, Fred. 2011. “Mental Illness, Crime, and Violence: Risk, Context, and Social Control.” *Aggression and Violent Behavior* 16(1): 36-44. doi: 10.1016/j.avb.2010.10.003

Marwick, Alice, and Rebecca Lewis. 2017. “Media Manipulation and Disinformation Online.” New York: Data & Society Research Institute.

McGinty, Emma, Daniel Webster, Marain Jarlenski, and Colleen Barry. 2014. "News Media framing of Serious Mental Illness and Gun Violence in the United States, 1997-2012." *American Journal of Public Health* 104(3): 406-413. doi: 10.2105/AJPH.2013.301557.

Meloy, J. Ried, Anthony Hempel, Thomas Gray, Kris Mohandie, Andrew Shiva, and Thomas Richards. 2004. "A Comparative Analysis of North American Adolescent and Adult Mass Murderers." *Behavioral Sciences & the Law* 22(3): 291-309. doi: 10.1002/bsl.586

Messner, Michael. 1998. "The Limits of 'The Male Sex Role' an Analysis of the Men's Liberation and Men's Rights Movements' Discourse." *Gender & Society* 12(3): 255–276. doi: 10.1177/0891243298012003002.

Mezzofiore, Gianluca. 2018. "The Toronto suspect apparently posted about an 'incel rebellion.' Here's what that means." *CNN Wire* April 25, 2018. Retrieved on October 9, 2019. (https://advance-lexis-com.proxy.longwood.edu/api/document?collection=news&id=urn:contentItem:5S63-MSG1-JBSS-S36G-00000-00&context=1516831).

Minassian, Alek. 2018. *Electronically Recorded Interview of Alek Minassian by Detective Robert Thomas (3917) on Monday, April 23, 2018 at 2246 Hours.* Toronto: *Sex Crimes Polygraph Unit of the Toronto Police.* Retrieved on October 7, 2019 (https://www.scribd.com/document/427612854/Alek-Minassian-Interview).

Monahan, John. 1992. "Mental Disorder and Violent Behavior: Perceptions and Evidence." *American Psychologist* 47(4): 511-521. doi: 10.1037/0003-066X.47.4.511.

Murray, Jennifer. 2017. "Mass Media Reporting and Enabling of Mass Shootings." *Cultural Studies Critical Methodologies* 17(2), 114-124. doi: 10.1177/1532708616679144

Parks, Joe, Donald Bechtold, Frank Shelp, Jeffery Lieberman, and Sara Coffey. 2019. *Mass Violence in America: Causes, Impacts and Solutions.* Washington, DC. National Council for Behavioral Health. Retrieved on October 10, 2019. (https://www.thenationalcouncil.org/wp-content/uploads/2019/08/Mass-Violence-in-America_8-6-19.pdf).

Perreaux, Les. 2018. "Suspect in Toronto Van Attack Alek Minassian described as Socially Awkward Tech Expert." *The Globe and Mail,* April 24. Retrieved October 20, 2019. (https://www.theglobeandmail.com/canada/toronto/article-suspect-in-toronto-van-attack-described-as-socially-awkward-tech/).

Robson, Steve, and Christopher Bucktin. 2018. "Toronto Van Attack Suspect 'was Troubled School Pupil who Licked His Hands and Meowed like a Cat'." *Daily Mirror*, April 26. Retrieved October 20, 2019. (https://www.mirror.co.uk/news/world-news/toronto-van-attack-suspect-was-12429671).

Rosenburg, Jessica. 2014. "Mass Shootings and Mental Health Policy." *J. Soc. & Soc. Welfare* 41: 107.

Schmitz, Rachel, and Emily Kazyak. 2016. "Masculinities in Cyberspace: An Analysis of Portrayals of Manhood in Men's Rights Activist Websites." *Social Sciences* 5(2): 1–16.

Schuchard, Ross, Andrew Crooks, Anthony Stefanidis, and Arie Croitoru. 2019 "Bots Fired: examining social bot evidence in online mass shooting conversations." *Palgrave Communications* 5(1): 1-12.

Silver, Eric. 2006. "Understanding the Relationship between Mental Disorder and Violence: The need for a Criminological Perspective." *Law and Human Behavior* 30(6): 685-706.

doi: 10.1007/s10979-006-9018-z.

Schildkraut, Jaclyn. 2014. “Mass Murder and the Mass Media: An Examination of the Media Discourse on U.S. Rampage Shootings, 2000-2012.” Doctoral dissertation, Texas State University.

Sutherland, Edwin, and Donald Cressey. 1974. *Criminology (9th ed.)*. New York: J.B. Lippincott.

Sykes, Gresham and David Matza. 1957. Techniques of Neutralization: A Theory of Delinquency. *American Sociological Review* 22(6): 664-670.

Tait, Melissa. 2018. "Toronto Van Attack: What we know about the Lives lost, the Suspect and more." *The Globe and Mail,* April 27. Toronto. Retrieved January 8, 2020. (https://www.theglobeandmail.com/canada/toronto/article-toronto-van-attack-what-we-know-so-far/).

Ten Years of Mass Shootings in the United States. Every Town for Gun Safety. Retrieved January 7, 2020. (https://everytownresearch.org/massshootingsreports/mass-shootings-in-america-2009-2019/).

Towers, Sherry, Andres Gomez-Lievano, Maryam Khan, Anuj Mubayi, and Carlos Castillo-Chavez. 2015. “Contagion in Mass Killings and School Shootings.” *PLoS one*, 10(7), e0117259. doi: 10.1371/journal.pone.0117259.

Westoll, Nick, and Ryan Rocca. 2019. “Toronto Van Attack Suspect's Police Interrogation to be made Public Friday Morning.” *Global News,* September 27. Retrieved September 30, 2019. (https://globalnews.ca/news/5958049/alek-minassian-police-interview-being-released/).

Zilbergeld, Bernie. 1999. *The New Male Sexuality - Revised Edition.* New York: Bantam.

Appendix I

*Highlighted "Turning Point" denotes entrance into the online subculture and the influence of the subculture on future actions

Theory	Alek's Experiences	Impact
Chronic Strain (Agnew, 1992)	Mental health struggles Failure to have strong social bonds Lack of attachment to peers	Limited pro-social interactions with peers - frustration
Acute Strain (Levin and Madfis, 2009)	Failure in seeking relationships with women - Direct rejection - Social shaming at Halloween party	Negative interactions with peers and limited coping mechanisms - frustration
Differential Association (Sutherland and Cressey, 1974). [Introduction to manosphere and INCELS] "Turning Point"	Exposure to the "manosphere" by a friend Increase in associations with others who have negative attitudes toward women - Refined worldview that promotes gender-based hate and addresses the chronic and acute strains experienced up until that point.	The transmission of ideas that justify externalization of frustrations and feelings to peers - utilization of techniques of neutralization - positive social experiences with peers online, - important bonds being formed, - becoming a part of something "bigger than himself"
Differential Opportunity (Cloward & Ohlin, 1994)	Opportunity to communicate with others who redefine his frustrations through misogynistic and hateful rhetoric - Exposure to specific INCELS members	Learned attitudes and terminology regarding perceived disadvantage - learned to shift the blame from himself to specific social groups (women and popular men)
Differential Identification	Identification and admiration of various INCEL members online.	- The transmission of ideas that justify and

(Glaser, 1960)	Communication with to-be murderers: Elliot Rogers, Christopher Harper-Mercer. - Felt warmly toward them - Feedback loop of support - Was "proud" of them upon their decision to act.	legitimate "beta uprisings" and further engrain dangerous extremist beliefs.
Differential Reinforcement (Akers, 1994)	Shaping of identity based on online feedback in interactions within the manosphere - Support for Minassian's media posts - Rogers encouraged Minassian, Minassian encouraged Rogers - Rogers acted, incel community praised him online	Minassian inspired by support from incels community - vicariously through support for Rogers *Escalation from ideas to action*

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Do Correctional Officer Recruits' Attitudes Change Toward the Job During Entry-Level Training? The Results of the Positive and Negative Affect Scale (PANAS)

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Do Correctional Officer Recruits' Attitudes Change Toward the Job During Entry-Level Training? The Results of the Positive and Negative Affect Scale (PANAS)

Abstract

The Positive and Negative Affect Scale (PANAS) was administered to two classes of recruits at the Maryland Correctional Entrance-Level Training Program (CELTP) to examine how recruits' affect changed from the onset of the entrance-level correctional academy through completion of the academy. The results of the study indicated changes in both positive and negative affect in half of the measured fields, with an increase in more positive affects than negative.

Keywords: Affect scale; academy training; related samples t-test

Introduction

Performing the duties of a correctional officer is counterintuitive to the manner in which most people view their interactions with other individuals. Performance of a correctional officer's duties require control and custody of individuals who have violated the laws of society, resulting in their being sentenced to a term of incarceration. While standards have been established for the recruitment, selection, and training of correctional officers at the federal, state, and local levels; including successful completion of an entrance-level training academy, there is little information about the impact of the academy experience as it relates to newly hired correctional officer recruits.

Upon completion of the academy and throughout their career, the correctional officer is required to be able to "balance humanity, compassion, personal authority, assertiveness, and the willingness to impose boundaries" (Morrison & Maycock, 2021, p.7). Researchers have studied correctional officer attributes including intelligence testing and officer certification (Super, 1997), mental health and wellness (Ricciardelli & Adorjan, 2020), and prison officer culture (Morrison & Maycock, 2021), yet few studies have focused on correctional officer recruits' affect.

Affect has been studied as it pertains to performance. Watson, Clark, and Tellegen (1988), described positive affect as "the extent to which a person feels enthusiastic, active, and alert" and negative affect as "a general dimension of subjective distress and unpleasurable engagement that subsumes a variety of aversive mood states, including anger, contempt, disgust, guilt, fear, and nervousness" (p. 1063). This research sought to examine changes in affect that occur for correctional officer recruits from the onset of their entry into the academy through graduation.

Purpose of the Current Study

Hiring a new employee is expensive and consists of a time consuming series of events for most employers. One must advertise the position, review applications, identify qualified applicants, interview and select qualified candidates, and, in the field of correctional officers, conduct a background check prior

to offering the position. Additionally, the correctional employer must train the individual for the position for which they have been selected. Often, the training is paid for by the hiring agency and additional costs include providing uniforms and a benefits package in addition to the cost of the academy. Given the extent of the cost involved in simply getting the applicant from recruit to correctional officer, it is important to understand obstacles that may prevent the applicant from completing the academy. Gaining an understanding of how a recruit's affect changes during the academy provides insight into recruits' experiences.

In order to become a correctional officer in Maryland, applicants must meet selection standards established by the Maryland Correctional Training Commission (Commission), and complete an entry-level academy, as well as field training. The time from application to seat in an entry-level training academy can be several weeks to a few months. The selection standards for correctional officer applicants were established in the Code of Maryland Regulations (COMAR), Title 12, Subtitle 10, Chapter 01, Section 04 (COMAR, 12.10.01.04) and included the following requirements: minimum age, citizenship, education, submit to a background and criminal history check, physical and mental health evaluations, oral interview, and a drug screening. Once hired, the recruit must complete a Commission approved entry-level academy and 80 hours of field training. Between 2018 and 2019, the entry-level correctional academy was a 7-week program and participants were required to pass established training objectives with a minimum grade of 75%.

The purpose of this study was to understand how recruits' affect changed from the onset of the entry-level correctional academy through completion of the academy. This article examined changes in affect using the Positive and Negative Affect Scale (PANAS). The PANAS, which was developed by Watson, Clark, and Tellegen (1988), was a validated method for measuring both positive and negative affect that was easy to administer. Data was collected from 201 correctional recruits who had been hired by a state correctional system in Maryland and participated in an entry-level correctional academy between 2018 -

2019. The state correctional system included 17 correctional facilities and a pretrial complex. Of the 17 correctional facilities, one was specifically designated for women. To answer the question "Do correctional entry-level recruits experience changes in affect from the beginning of the entry-level academy through the completion of the academy?", paired-samples t-tests for each PANAS measurement were conducted. This included collecting pre and post PANAS results from recruits.

Literature Review

Arnold (2016) determined there were two reasons individuals became correctional officers, (1) to fulfill a pragmatic desire such as steady employment, location, or promotion; or (2) a desire to improve self or others that was often influenced by friends or family members who also worked in corrections. Vickovic and Morrow (2019) described the role of correctional officers as occurring in a distinctive work environment and being important to the fulfillment of the goals of the institutions. Gorman and Meriac (2016) studied the role of work ethic and its relationship to being perceived as a good correctional officer. These researchers focused on the needs of the institutions and the uniqueness of the role; motivation – desire for steady employment; the need to improve self based on the influence of family or friends; and work ethic combined with a desire to be perceived as a good officer. The researchers did not focus of the feelings the officers had about working in a distinctive environment or their attitudes in relation to achieving a goal of obtaining steady employment, self-improvement, or work ethic. This research captured the affect of the recruits at the onset of their journey to becoming correctional officers and at the completion of their training during which the duties and dangers of the position had been taught. Not many civilian jobs require training on topics such as security, custody, and control; cell extraction; disturbance control; escort and transport of inmates; restraint devices; fire control and prevention; and hostage situations (Correctional Entry-Level Training Objectives, 2021).

Once an individual has become a correctional officer, the officer faces a variety of work-related stressors (Trounson & Pfeiffer, 2016). These stressors are frequently portrayed in television shows and

movies as involving abuse, assault, harassment, and other violent actions. Vickovic, Griffin, and Fradella (2013) asserted media depictions that are sensationalized and inaccurate can result in the public holding distorted views of both correctional officers and the environments in which they work. These views are frequently based on non-factual sources and the fact that what happens often occurs behind closed doors (Vickovic, et al., 2013).

Research exists about the profession of correctional officer (Arnold, 2016; Gorman & Meriac, 2016; Trounson & Pfeiffer, 2016). Research also exists regarding negative public opinions about correctional officers (Vickovic, et al., 2013), yet there is very little research regarding recruits' attitudes about the job of correctional officer; raising questions about the recruits' attitudes toward the profession. One could question if the recruits' attitudes are impacted by negative portrayals of the profession, are they apprehensive about the position, and does training impact any positive or negative attitudes the recruit may bring to the position? This research examined the positive and negative affect of correctional officer recruits and changes in affect during the seven weeks the recruits were participating in the entry-level correctional academy.

Data and Methods

All correctional officer recruits must attend and complete an entry-level correctional academy prior to being fully certified as a correctional officer in Maryland. The selected academy was operated by employees of the hiring agency and staffed by a combination of certified correctional officers and civilian instructors. The recruits were required to master entry-level training objectives established by the Commission and to demonstrate mastery of the training objectives by scoring 75% or higher on each terminal objective taught in the academy. In addition to classroom work, recruits participated in both defensive tactics and physical fitness training and there was a mastery requirement for these types of training as well.

In order to determine recruits' positive and negative pre and post affect measures, the staff of the academy administered the PANAS within the first three days of the academy start date and again during the final three days of the academy end date. To identify the start and end results of the PANAS, recruits provided responses to a series of questions that allowed for an anonymous, unique identifier. This anonymity allowed the researchers to compare pre and post PANAS results. Data was collected from six academies in 2018 and four academies in 2019. One of the 2019 academies only submitted pre-PANAS results and the recruit class was not included in the final analysis.

The pool of participants consisted of 306 entrance-level recruits enrolled in the entry-level academy between 2018 and 2019. Participation was voluntary resulting in 293 PANAS results being collected. Some recruits did not complete the academy in its entirety resulting in a sample size of n=201. In addition, some recruits either entered more than one response in a category or skipped the category entirely. The responses with only one entry were not included in the analysis. The demographics of the participants including gender and race were not collected on the PANAS; however the total number of males and females (n=306) in the 2018 and 2019 academies for which the PANAS results were collected are provided in Table 1. The ages of the recruits ranged from 21 years - 68 years old.

Table 1

Recruits by Gender

Males	**Total Male Recruits**	**Females**	**Total Female Recruits**
Academy Begin	149	Academy Begin	157
Academy End	142	Academy End	123
Attrition Rate	-5%	Attrition Rate	-22%

Permission to complete the study was granted by the Maryland Department of Public Safety and Correctional Services Department Research Committee. The Department entered into a Memorandum of Understanding with York College (Pennsylvania) to conduct the data analysis.

A staff member from the entry-level correctional academy met with each recruit class within the initial three days of the academy start date. The PANAS was administered and the results were collected, placed in a sealed envelope, and returned to the researcher. Within the last three days of the academy, a staff member from the entry-level correctional academy met with the recruits and administered a second PANAS. The results were also collected and returned to the researcher. The data included five response categories of “Very slightly or not at all”, “A little”, “Moderately”, Quite a bit”, and “Extremely”. Each category was assigned a numerical value and the data was entered into SPSS. The researchers examined changes in affect from the onset of the academy to the completion of the academy via a paired-samples *t* test for each of the positive and negative affect measures in the PANAS (see Table 2).

Table 2

PANAS Categories

Positive Affect	**Negative Affect**
Interested	Distressed
Excited	Upset
Strong	Guilty
Enthusiastic	Scared
Proud	Hostile
Alert	Irritable
Inspired	Ashamed
Determined	Nervous
Attentive	Jittery
Active	Afraid

Watson, Clark, and Tellegen (1988)

Results

Paired-sample t-tests were conducted to evaluate whether positive or negative affect changed as the result of completion of a 7-week entry-level academy for state correctional officers. The results indicated an increase in positive affect for the measures of excited (t(192)=-2.795 p<.05); strong (t(186)=-4.473 p<.05); enthusiastic (t(188)=-2.426 p<.05); proud (t(184)=-2.283 p<.05); and active (t(190)=-2.176 p<.05). In addition, our analysis found a decrease in negative affect for the measures of scared (t(196)=2.516 p<.05); nervous (t(188)=4.534 p<.05); and jitters (t(191)=2.900 p<.05). The measures of the negative affect categories of guilty (t(189)=-2.158 p<.05) and irritable (t(191)=-2.668 p<.05) indicated an increase in negative affect upon completion of the entry-level academy. There were no statistically significant changes for the five remaining measures of positive affect or the five remaining measures of negative affect. The results of the t-tests can be found in Table 3.

Table 3

Paired Samples t-Tests for the PANAS Scales

Pair	Mean	SD	t	df	Sig. (2tailed)
Interest_Pre Interest_Post	-.13265	1.07787	-1.723	195	.086
Distressed_Pre Distressed_Post	.10638	1.40639	1.037	187	.301
Excited_Pre Excited_Post**	-.22280	1.10731	-2.795	192	.006
Upset_Pre Upset_Post	-.10870	1.18696	-1.242	183	.216
Strong_Pre Strong_Post***	-.40642	1.24242	-4.473	186	.000
Guilty_Pre Guilty_Post*	-.13684	.87421	-2.158	189	.032
Scared_Pre Scared_Post*	.22335	1.24575	2.516	196	.013
Hostile_Pre Hostile_Post	-.06818	1.02868	-.879	175	.380
Enthusiastic_Pre					

Enthusiastic_Post* Proud_Pre	-.23810	1.34932	-2.426	188	.016
Proud_Post* Irritable_Pre	-.25946	1.54559	-2.283	184	.024
Irritable_Post** Alert_Pre	-.25000	1.29841	-2.668	191	.008
Alert_Post Ashamed_Pre	-.12366	1.31551	-1.282	185	.201
Ashamed_Post Inspired_Pre	.04891	1.14653	.579	183	.564
Inspired_Post Nervous_Pre	-.18085	1.27050	-1.952	187	.052
Nervous_Post*** Determined_Pre	.51323	1.55607	4.534	188	.000
Determined_Post Attentive_Pre	-.00524	1.04377	-.069	190	.945
Attentive_Post Jitters_Pre	.00000	1.23969	.000	190	1.000
Jitters_Post** Active_Pre	.27604	1.31915	2.900	191	.004
Active_Post* Afraid_Pre	-.21990	1.39692	-2.176	190	.031
Afraid_Post	.13198	1.26686	1.462	196	.145

*** p<.000; ** p<.01; * p<.05

Discussion

A literature review did not yield any research about affect changes for new hires embarking upon the career of correctional officer, giving credence to Liebling's (2000) assertion "prison officers are in many ways the invisible ghosts of penalty" (p. 337). Further explaining the perception of correctional officers, Liebling (2000) stated correctional officers represented "everything that is dangerous and unpalatable about the use of power" (p. 338). Given the negative perceptions about correctional officers in the mainstream media including news, television shows, and social media, one could anticipate high levels of negative affect toward the career among members of the public – including correctional officer recruits. Gaining insight into both the positive and negative affect of correctional recruits could be beneficial to the recruitment and retention of new officers.

This study determined that correctional officer recruits' positive affect was statistically improved in the categories of excited, strong, enthusiastic, proud, and active from the beginning of the 7-week correctional entry-level academy through the completion of the academy. The study also determined that recruits' negative affect was statistically decreased in the categories of scared, nervous, and jitters; while there were significant increases in negative affect in the categories of guilty and irritable for correctional officer recruits upon completion of the academy.

There were methodological limitations to this study. This study took place at a single academy in one state so results cannot be generalized to the larger population. At the time the data was collected, specific demographic information such as gender and race were not collected for individual participants; gender was available for the total number of recruits in each academy class and was reported in Table 1. Although specific gender and race figures were not available, it was known that a number of correctional officer recruits participating in this study did not speak English as their native language. The results of this study did not factor in any language or cultural barriers. In addition, due to the limited nature of the PANAS, it was difficult to assess the full extent of the academic environment on changes in affect. Finally, the target population for this study consisted of state correctional officers who would be working within a prison population upon graduation. This population included low and high-risk offenders who may have been held pretrial (pending a decision about their charges) through individuals sentenced to life imprisonment and classified as minimum, medium, and maximum security. County correctional officers who work with a population sentenced to less than 18 months and who are housed in a local correctional facility were not included in this research.

Lerman and Harney (2019) determined that correctional officer's attitudes influenced their behavior at work and, as such, their attitudes shaped the quality of their interactions with the incarcerated population. The results of this study saw an increase in five areas of positive affect including excited, strong, enthusiastic, proud, and active; along with a decrease in negative affect including scared, nervous,

and jitters. These changes in eight measures of affect indicated recruits were more confident and better prepared for the beginning of their careers as correctional officers.

Upon completion of the academy, correctional officers moved to the next phase of training which consisted of field training. During this phase the correctional officers were paired with an experienced officer, worked in their assigned facility, and performed the tasks for which they were trained in the academy. Administering the PANAS at specific periods during field training would contribute to research regarding correctional officer attitudes as changes in affect could continue to be measured. The research could be enhanced by accounting for factors including type of facility, assigned shift, interpersonal relations with field trainers, and significant changes in personal lives. Measuring changes in affect during field training would bolster the research as the academy was conducted at an external location outside the confines of the prison.

The research indicated increases in negative affect for the categories guilty and irritable. One hypothesis for this increase may be directly related to the number of recruits who are immigrants. It is widely understood that America's incarceration rates are higher than those of other countries. Slobogin (2015) described the differences in the United States' rates of incarceration in the following way – 70% of offenders in the U.S. are incarcerated for a period of approximately three years, but in European countries only 20-30% of offenders receive prison sentences, and these sentences are for an average of less than 12 months.

Muftić, Payne, and Maljević (2015) studied perceptions about the use of electronic monitoring among American students in Georgia and Bosnian students. The researchers accounted for factors such as knowledge about electronic monitoring, attitudes toward rehabilitation, and the type of offender placed on electronic monitoring. The results determined that nationality was the only variable that held up in all of their models (Muftić, et al., 2015). In general, American students viewed the use of electronic monitoring as a tool for rehabilitation as less effective than the Bosnian students and this difference was

attributed to differences in attitudes toward penal ideologies (Muftić et al., 2015). Immigrants working as correctional officers may hold different attitudes toward incarceration and may be in conflict with the concept of asserting control and custody over another individual leading to increased guilty affect.

Lerman and Harney (2019) postulated that correctional officer's attitudes, values, and self-perceptions were established before they entered the profession. While Lerman and Harney (2019) attributed these established beliefs to impacting the attitudes officers hold toward punishment and rehabilitation, they may also relate to training. As stated previously, the training correctional officers in Maryland received was based on established objectives. The objectives included 34 terminal objectives and 108 enabling objectives. Only two of the terminal objectives were specific to correctional officers.

One terminal objective focused on the ethics and professionalism of correctional officers and another terminal objective was stress management for correctional officers (Correctional Entry-Level Objectives, 2012). The remaining 32 terminal objectives and 104 enabling objectives pertained to the safety and security of the incarcerated individual. Training could be enhanced to include a focus on correctional officer attitudes and how they change over time because of factors including policy changes, overcrowding, understaffing, and perceptions of personal safety and security.

Conclusion

The profession of correctional officer will exist for as long as individuals commit crimes and courts sentence offenders to periods of incarceration. The availability of career choices for individuals completing high school and college has changed significantly since the onslaught of technology. In order to more effectively recruit individuals to the career of correctional officer, it is important to understand the feelings that may impact their willingness to apply to become correctional officers. Additionally, it is important to understand the impact of the academic environment, the entry-level academy, on recruits. Gaining an understanding of a recruit's affect is expected to influence how recruitment is conducted and

how to improve the academic environment of the correctional entry-level academy to better prepare individuals to become correctional officers.

References

Arnold, H. (2016). The prison officer. In: Jewkes, Y., Crewe, B. & Bennett, J. (eds) *Handbook on prisons*, (2nd Ed.) (265-283). Abingdon: Routledge.

Correctional entry-level training objectives. (2012). Retrieved from https://mdle.net/pdf/CELTPobj-7-1-13.pdf

Gorman, C.A. & Meriac, J.P. (2016). Examining the work ethic of correctional officers using a short form of the Multidimensional Work Ethic Profile. *The Prison Journal, 96*(2), 258-278. doi: 10.1177/0032885515618467

Leibling, A. (2000). Prison officers, policing and the use of discretion. *Theoretical Criminology,* 4(3), 333-357. doi:10.1177/1362480600004003005

Lerman, A.E. & Harney, J. (2019). Feedback effects and the criminal justice bureaucracy: Officer attitudes and the future of correctional reform. *The ANNALS of the American Academy of Political and Social Science*. 2019;685(1):227-249. doi:10.1177/0002716219869907

Morrison, K. & Maycock, M. (2021). Becoming a prison officer: An analysis of the early development of prison officer cultures. *The Howard Journal, 60*(1), 3-24. doi:10.1111/hojo.12394

Muftić, L.R., Payne, B.K., & Maljević, A. (2015). Bosnian and American students' attitudes toward electronic monitoring: Is it about what we know or where we come from? *International Journal of Offender Therapy and Comparative Criminology*. 2015;59(6):611-630. doi:10.1177/0306624X13516286

Ricciardelli, R. & Adorjan, M. (2020). Correctional officer training: Opportunities and challenges of the AMstrength program in Canada. *Journal of Forensic Psychology Research and Practice, 21*(1), 40-60. https://doi-org.ezproxy.liberty.edu/10.1080/24732850. 2020. 1829445

Slobogin, C. (2015). How changes in American culture triggered hyper-incarceration: Variations on the Tazian view. *Howard Law Journal, 58*(2), 305-331.

Super, J.T. (1997). Intelligence testing and officer certification examination standing. *Journal of Criminal Justice, 25*(1), 43-47.

Trounson, J.S. & Pfeiffer, J.E. (2017). Correctional officers and workplace adversity: Identifying interpersonal, cognitive, and behavioral response tendencies. *Journal of Correctional Health Care, 23*(4), 447-448. https://doi.org/10.1177/1078345817720923

Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070.

Vickovic, S.G. & Morrow, W.J. (2020). Examining the influence of work-family conflict on job stress, job satisfaction, and organizational commitment among correctional officers. *Criminal Justice Review, 45*(1), 5-25. https://doi.org/10.1177/0734016819863099