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The Effects of Social Media on Collegiate Aviation Students Academic Performance: Student Perceptions

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Abstract

The purpose of this study was to examine the perceptions of collegiate flight students regarding the effects of social media on student GPA and academic performance. Exploratory in nature, this research sought information from collegiate aviation students regarding utilization, duration, communication, dependency, and overall effects of social media. In this study collegiate aviation students completed an online research instrument which assessed personal use of social media, perceptions of social media impact, and personal comments to identify if social media affects collegiate aviation student GPA and overall academic performance. This study determined that collegiate aviation students do not believe social media has a negative effect on their GPA or academic performance, if used in moderation and at appropriate times.

Keywords: social media; collegiate aviation students; academic performance

Since the introduction of the internet and smartphones, social media has taken the world by a technological storm. Individuals can now connect to anyone, anywhere, at any given time literally at their fingertips. Social media is part of our everyday lives, it has changed the way society communicates and influences the stream of information. Even the current President of the United States, Donald Trump utilizes social media sites such as Twitter to communicate information. With pros and cons to social media, one wonders about the impacts of such media on higher education, particularly collegiate aviation students. The effects of social media on collegiate aviation students are particularly important because collegiate aviation students aspire to gain employment in a high-consequence industry where communication and the stream of information is a vital part of the industry's environment. Without student's proper ability to communicate and relay information the consequences could be devastating. With the traditional 18-21 year-old collegiate aviation student having been born between 1996 and 1999, they are a generation that since birth had computers and the ability to communicate electronically. They will never know the agonizing sound of dial-up internet, the inconvenience of reading paper maps, or the nature of a friendly debate without finding the answer in minutes with a quick Google search. In a world filled with smartphones, tablets, and Wi-Fi, they are a product of their environment. They are in constant contact with email, text messages, status updates, and videos. They are a generation of instant gratification and changing social communication skills. According to Barnes and Mattson (2010) "This world of interactivity and hyper-communication has fundamentally changed how teenagers and young adults receive, process, and act on information." (p. 1). Social media is changing the landscape of our society, especially in the way society communicates. Consider sitting in a contemporary college classroom minutes before class is scheduled to begin. Many students sitting in the classroom are interacting with each other, just not in person; rather, they remain quiet and use social media to communicate. They are updating their status, checking into their location, or posting a picture--without ever physically or verbally interacting. Many researchers including Jacobsen and Forste (2011), Griffin (2015), Bennet (2014), and Oberst (2010) have dedicated considerable amounts of research and time to understand how social media influences college students. This research sought to identify if social media specifically affects collegiate aviation student GPA and academic performance, and to what extent.

Literature Review

Social Media Concept and Student Usage

The Oxford Dictionary (2017) defines *social media* as websites and applications that enables users to create and share content or to participate in social networking. Social media or social networking is primarily internet- or cellular phone-based applications and tools to share information among people. Social media allows users to socialize and network online through words, pictures, and videos (Rueben, 2008). Social media allows individuals to share ideas, interests, and personal information without ever coming into physical contact or exchanging words verbally. According to Bennet (2014) an estimated

75 million Americans check their social networks several times each day. In 2010, Oberst identified that seventy-three percent of wired American teens now use social media websites.

Research on this topic reveals that social networking sites have become a part of how college students interact with each other. On any campus, at any point in time, there are likely to be thousands of college students using some form of social media. Even as far back as 2007, 94% of first year college students reported spending time on online social networking websites during a typical week (Higher Education Research Institute, 2007).

Collegiate aviation students like other college students use social media platforms for various reasons that include, but are not limited to keeping in touch with family and friends, sharing photos, and being informed about a variety of topics in the news and on campus. Griffin (2015) found that 98% of college-aged students use some form of social media. According to a Nielsen Media Research study, approximately 25% of college students' time online is now spent on social media websites (Jacobsen, & Forste, 2011).

The use of social media continues to grow and impact students and society. Duggan and Smith (2014) discovered social media usage has increased nationally by almost 1,000% in eight years for people between 18 and 29. Many consider social media a distraction in higher education if used inappropriately during class, while studying, or completing homework assignments. Jacobsen and Forste (2011) found that two-thirds of first-year college students reported using electronic media while in class, studying, or while doing homework. As social media continues to grow in popularity, it is evident that social media is a critical part in today's collegiate aviation student environment.

Effects of Social Media on Non-Collegiate Aviation Student Academic Performance

Social media has both positive and negative effects on non-collegiate aviation student GPA and academics. According to Choney (2010) due to the increased popularity of social media, economists and professors are questioning whether grades of college students are being affected by how much time is being spent on these sites. To better comprehend the effects of social media on collegiate aviation student GPA and academic performance it is important to consider the effects of social media on non-collegiate aviation student GPA and academics.

In 2011, Jacobsen and Froste conducted a study on college students that measured social media use and academics. Participants constructed time diaries, in which they wrote down specific things they did daily and the duration. For example, participants would log if they chose to study, for how long, and if they had any social media interruptions. In their study, Jacobsen and Forste (2011) found that electronic media use and social media use was negatively associated with student's grades.

Research by Cotten and Junco (2012) found that college students who utilized Facebook while doing their schoolwork were negatively associated with overall college GPA. They found that 'Facebooking' while doing schoolwork may affect student capacity for cognitive processing and inhibit them from deeper learning.

Additionally in 2015, Michikyan, Subrahmanyam, and Dennis conducted research over the social media platform Facebook and how it affects a college student's academic performance. In their study they discovered that students with lower GPAs spend more time on Facebook than students with higher GPAs. Their findings implied that students who experienced difficulties were the students who most likely turned to Facebook for distraction, entertainment, or to cope with frustration. According to Karadkar (2015):

Getting too involved in social media can lead to an addiction that inculcates bad habits. Students prefer to chat with friends for hours, and this leads to a waste of time that could have been used for studying, playing or learning new skills. (p.1)

Not all research over the relationship of social media and college academics have negative results. Some researchers have found that social media can complement the learning environment and help students. Research by Blaschke (2014) exemplifies that college students could benefit from social media use throughout their college years. Blaschke found that a combination of course design and delivery paired with social media technology aided students in cognitive and meta-cognitive development. Additionally, another study found that students that utilized Twitter for educational purposes verses students who did not had better grades and higher GPAs. (Junco, Heibergert, and Loken, 2011). Furthermore, George and Dellasega (2011) found the benefit of social media such as Skype and Twitter used in the classroom can help learning by connecting students with external experts while encouraging creativity on homework assignments.

Social Media Platforms

For the purpose of this study, social media was defined as Facebook, Instagram, Snapchat, and Twitter. Of the previously mentioned social media sites, Facebook is the most predominately used site with more than 2 billion users as of June 2017, 76% of whom log-in daily (Edwards, 2017). This form of social media allows people to connect by sharing links, photos, and videos. Facebook was originally founded for college students in 2004. Creator Mark Zuckerberg wanted to find a way for his fellow Harvard colleagues to connect with each other, which resulted in his creation of Facebook. Today, Facebook users are not limited to college students. Facebook is made up of various components including but not limited to: personal profiles, status updates, networks, groups, applications, and fan pages (Reuben, 2008).

Instagram is an internet-based photo sharing application that allows users to share photos and videos. Instagram arrived on the social media scene in October 2010.

Unlike its social media counterpart Facebook, Instagram focuses on simplicity and inspiring creativity through solving problems with thoughtful product design (Instagram, 2017).

Snapchat allows users to communicate with each other by sharing *snaps* or small segments of their lives through photos and videos. According to Snap Inc., “Snapchat empowers people to express themselves, live in the moment, learn about the world, and have fun together” (Snap Inc., 2017, p. 1). In 2016, Snapchat had over 200 million users (Statista, 2017).

Twitter is a microblogging site where users use smartphones or computers to send and read messages called *tweets*. Tweets are limited to 140 characters. Users can also follow tweets posted by other users, send them messages directly, reply publicly, or make personal posts. Twitter (2017) is described as ‘what’s happening in the world and what people are talking about right now.’ Twitter is credited with finding the social media trend of using a hashtag. A hashtag is a word or phrase preceded by a hash or pound sign [#].

Methodology

The research questions that guided this research sought to identify if time spent on social media impacts collegiate aviation students’ GPA and overall academic performance.

Research Questions

1. Does spending time on social media sites affect collegiate aviation students’ GPA?
2. Can social media sites enhance collegiate aviation students’ academic performance?

Research Population

To answer these research questions, this study sought information from twenty aviation institutions across the U.S. that offer a comprehensive aviation curriculum. The author sent out personal emails to aviation faculty at these twenty institutions inviting them to participate with a provided electronic survey link to forward to their collegiate aviation students. After approximately two weeks, a second reminder solicitation email was sent to aviation faculty. After approximately one month, the survey was deactivated and results were processed for this study. Because of the anonymity of the electronic survey, institutions that participated were not identified.

Research Instrument

Developed by the author, the research instrument was created to solicit collegiate aviation students' characteristics, social media usage, perceptions, and personal comments. Characteristic questions sought information regarding student major, age, social media platforms used, and GPA range. Perception questions were offered in Likert-scale statements in an ordinal measurement pattern that offered respondents the options of: Strongly Agree, Agree, Disagree, or Strongly Disagree. For this study, the author used a 0-4, forced response, Likert-Scale. The forced-response Likert-scale does not offer a central or neutral choice and forces the respondents to agree or disagree with the statement (Trochim, 2006). The last section of the research instrument was an open text box for students to summarize their insights or feelings toward social media and their college education. Permission to conduct this study and solicit this research instrument was approved by the Institutional Review Board at Oklahoma State University (approval # ED-17-99).

Statistical Analysis

Descriptive statistics were used in this study to demonstrate collegiate aviation students' perceptions of social media to aide in answering the two research questions. Descriptive research helps describe, show or summarize data using percentages, rates, ratios, graphs, and frequency distributions (Laerd Statistics, 2013). The benefits of using descriptive statistics are to help researchers to effectively describe and communicate patterns that might emerge from the data. The descriptive statistics in this study were summarized by using frequency distributions and percentages.

In addition to descriptive statistics, One-Way Analysis of Variance *ANOVA* was used to compare the means among more than two groups. The *ANOVA* groups were participants that identified on the questionnaire their aviation major as aviation management, professional pilot, aviation safety, air traffic control, or other. Variance is the average of the squared deviations of the individual values. "One-way *ANOVA* is used to determine if there are any statistical significant differences between the means of three or more independent variable groups on a dependent variable" (Healey & Prus, 2016, p. 263). According to Lomax and Hans-Vaughn (2012):

One way of comparing a set of means or "average" is to think in terms of how those means vary. If the sample means are all the same, then the variability of those means would be 0. If the sample means are not all the same, then the variability of those means would be somewhat greater than 0. In general, the greater the mean differences are, the greater is the variability of the means. (p. 292)

To examine the research questions for this study, an Analysis of Variance was conducted to determine if statistical significant differences existed between the Likert-

scale statement “Social media has negatively affected my academic performance.” and the collegiate aviation students’ characteristics question, “What is your aviation major?”.

The ANOVA dependent variable in this research study was collegiate aviation students’ perception of social media effects on their academic performance. The ANOVA independent variable was the discrete groups of students’ majors; aviation management, professional pilot, aviation safety, air traffic control, and other. To determine whether the differences between group means are statistically significant the researcher compared the p -value to the significance level. The University of Washington (2010) states there are two ways to report p -values, which is typically 0.05 or 0.01. The p -value or significance level used in this One-Way ANOVA for this research study was 0.05. If the p -value is less than or equal to the p -value or significance level of 0.05, there is statistical significance. If the p -value is greater than the p -value or significance level of 0.05, the difference between the means is not statistically significant (Lomax & Hans-Vaughn, p. 297-298).

Once the online research questionnaires were completed, the data were organized, evaluated, and anonymously coded by the researcher into the statistical analysis software program, Statistical Package for the Social Sciences (SPSS). The results and interpretation of this statistical analysis of data will be discussed in Results section.

Limitations of Study

Limiting to this study was the volunteer participation of the respondents. Results of this study reflect 122 participating respondents who were available and willing to complete the electronic research instrument. Additionally, the research instrument used self-reporting which allowed respondents to read the question and select a response by themselves, without the researcher’s interference or observation. Limiting the study, self-reporting participants may not have responded truthfully because they wish to present themselves in a socially-acceptable manner.

Results

Collegiate Aviation Students Characteristics

Descriptive statistics were used in this study to examine and present collegiate aviation students’ characteristics and usage of social media to aid in answering the research questions “Does spending time on social media sites affect collegiate aviation students’ GPA?” and “Can social media sites enhance collegiate aviation students’ academic performance?”

The first question of the research instrument asked respondents to identify their aviation major at their educational institutions. Choices for this question were: aviation management, professional pilot, aviation safety, air traffic control, or other. Table 1

Collegiate Aviation Students Majors indicates that of the $N=122$, 38% selected aviation management, 45% professional pilot, 6.5% aviation safety, 4% air traffic control, and 6.5% other.

Table 1

Collegiate Aviation Student's Major

Student's Major	Percentage of Responses
Aviation Management	38% $n= 46$
Professional Pilot	45% $n= 55$
Aviation Safety	6.5% $n= 8$
Air Traffic Control	4% $n= 5$
Other	6.5% $n= 8$

Respondents were then asked to identify their age. The age range of interest was that of the traditional college age student 18-21 years old. This provided data from a generation with adequate experience in both social media and higher education. Forty-five percent indicated that they were between the ages of 18-21; while 32% indicated they were between the ages of 21-24. The remaining 23% indicated they were 24 or older. Table 2 *Collegiate Aviation Student's Age* details the respondents' answers to this question.

Table 2

Collegiate Aviation Student's Age

Student's Age	Percentage of Responses
18-21	45% $n=55$
21-24	32% $n=39$
24-27	7% $n=8$
Other	16% $n=20$

To understand collegiate aviation students' social media preferences, question three asked respondents which social media sites they primarily use. Respondents could choose from the following: Facebook, Instagram, Snapchat, and Twitter. Table 3 *Primary Social Media Source* indicates very close results between Facebook, Instagram, and Snapchat. Thirty percent of respondents said they primarily use Snapchat, while 29% use Facebook, and 28% Instagram. The remaining 13% indicated they primarily use Twitter.

Table 3

Primary Social Media Source

Social Media Platform	Percentage of Responses
Facebook	29% <i>n</i> =35
Instagram	28% <i>n</i> =34
Snapchat	30% <i>n</i> =38
Twitter	13% <i>n</i> =15

To aide in answering the research question “Does spending time on social media sites affect collegiate aviation students’ GPA?” the research instrument asked respondents to identify their current GPA range. Table 4 *Grade Point Average Range* represents respondents’ current GPAs.

Table 4

Grade Point Average Range

GPA Range	Percentage of Responses
4.0-3.5	43% <i>n</i> =53
3.5-3.0	39% <i>n</i> =47
3.0-2.5	14% <i>n</i> =17
Less than 2.5	4% <i>n</i> =5

The fifth question asked respondents the duration in hours they spend on social media daily. Table 5 *Hours Spent on Social Media* illustrates that the majority of respondents spend between 0-5 hours daily on social media.

Table 5

Hours Spent on Social Media

Hours	Percentage of Responses
0-5	88% <i>n</i> =107
5-10	11% <i>n</i> =14
10-15	0% <i>n</i> =0
15 or more	1% <i>n</i> =1

When asked how collegiate aviation students access social media sites. Over half--60% indicated they access social media via smartphone. Table 6 *Social Media Access* depicts the distribution of the remaining 40%.

Table 6

Social Media Access

Access Device	Percentage of Responses
Smartphone	60% <i>n</i> =73
Desktop Computer	7% <i>n</i> =9
Lap top Computer	20% <i>n</i> =24
Tablet	11% <i>n</i> =13
Other	2% <i>n</i> =3

The next question sought to identify collegiate aviation students' dependency on social media. The question asked students if they can comfortably go without social media for more than one day. Eighty-eight percent indicated "yes" while the remaining 12% indicated "no". Table 7 *Social Media Dependency* illustrates these results.

Table 7

Social Media Dependency

Can you comfortably go without social media sites for more than one day?	Percentage of Responses
Yes	88% <i>n</i> =107
No	12% <i>n</i> =15

Question eight asked collegiate aviation students if they ever interrupt studying to get on social media. Seventy-five percent indicated "yes", while the remaining 25% indicated "no". Table 8 *Social Media Interruptions* shows the results for question eight.

Table 8

Social Media Interruptions

While studying for class do you ever interrupt your studying to get on social media sites?	Percentage of Responses
Yes	75% <i>n</i> =91
No	25% <i>n</i> =31

If respondents indicated “yes” to question eight, question nine asked how often they interrupt studying to get on social media. The majority of respondents indicated that they interrupt their studying 1 or more time(s) to get on social media. Table 9 *Social Media Interruption Frequency* shows these results.

Table 9

Social Media Interruption Frequency

If you answered yes to the previous question, How often?	Percentage of Responses
1 time	19% <i>n</i> =23
1 or more time(s)	81% <i>n</i> =99

The next question sought to identify how often collegiate aviation students access social media during class. The question, “How often (if ever) do you access social media sites during class?”, forty-five percent identified they access social media zero times during class, while 36% access it 1 or more times, and 19% access social media during class 2 or more times. Table 10 *Social Media Access During Class* shows the results to this question.

Table 10

Social Media Access During Class

How often (if ever) do you access social media sites during class?	Percentage of Responses
0 times	45% <i>n</i> =55
1 or more times	36% <i>n</i> =44
2 or more times	8% <i>n</i> =10
3 or more times	11% <i>n</i> =13

The final collegiate aviation student characteristic question asked students the regularity in which they use social media sites to look for college related information. Sixteen percent responded they do it often, while 45% said sometimes, and 39% said they never use social media to look up college related information. Table 11 *Social Media for Academics* shows these results.

Table 11

Social Media for Academics

Primarily, how often do you use social media sites looking for college related information?	Percentage of Responses
Often	16% <i>n</i> =20
Sometimes	45% <i>n</i> =55
Never	38% <i>n</i> =47

Collegiate Aviation Students Perceptions of Social Media

The second section of the research instrument explored the personal perceptions of each responding collegiate aviation student. Seven Likert-scale statements requested respondents to indicate their perception of each statement by selecting one of four options: strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD).

Table 12, *Collegiate Aviation Students' Academic Perception of Social Media* presents data obtained from three Likert-scale statements revealing respondents' perceptions of: (1) social media's effect on academic performance, (2) social media's effect on students focus and studying habits, and (3) social media aiding in becoming better students.

Table 12

Collegiate Aviation Students' Academic Perception of Social Media

Likert Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
Social Media has negatively affected my academic performance.	3 (2%)	37 (30%)	51 (42%)	31 (26%)
Social Media negatively affects my ability to focus and my studying habits.	12 (10%)	48 (39%)	40 (33%)	22 (18%)
Social Media makes me a better collegiate aviation student.	2 (2%)	32 (26%)	63 (52%)	25 (20%)

The last set of Likert statements inquired about the role social media plays in collegiate aviation students' communication and learning environment. Table 13 *Perceptions of Social Media's Impact* demonstrates respondents' answers.

Table 13

Perceptions of Social Media's Impact

Likert Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
Social Media distractions should be a primary concern of the Aviation department at my college/university.	5 (4%)	26 (21%)	65 (54%)	26 (21%)
As a collegiate aviation student I would benefit from the usage of social media in the classroom.	3 (2%)	36 (29%)	61 (51%)	22 (18%)
Social Media has changed the way I communicate socially including with my instructors and peers.	11 (9%)	38 (31%)	46 (38%)	27 (22%)
Overall, social media will have a significant impact on collegiate aviation students.	6 (5%)	60 (49%)	42 (35%)	14 (11%)

The One-Way ANOVA, [$F(4, 118) = .611, p = 0.655$] demonstrated that there was no significance difference between the independent variable and the dependent variable at the $p < 0.05$. Since the significant value was not less than 0.05 there is a no statistical difference between the Likert-scale statement “Social media has negatively affected my academic performance” and the collegiate aviation student characteristic question, “What is your aviation major?”.

Collegiate Aviation Students Personal Comments

The last section of the research instrument allowed students to leave their personal comments summarizing their insights and feelings toward social media and their college education. Of the $N=122$ responding collegiate aviation students, 70% of students left personal comments. Notable personal comments related to the research questions will be presented in the discussion.

Discussion

According to the data collected, the majority of collegiate aviation students that responded do use social media regardless of their age or academic major. Snapchat, Facebook, and Instagram are the most popular and most commonly accessed via smartphones allowing students to communicate with friends, family, and peers. Students that responded in the personal comment section emphasized that social media is a distraction; however, they expressed it was only a distraction or affected their studies if

they choose to let it. One student responded with their personal comment “I enjoy using Snapchat and Instagram to communicate and interact with my friends and people I know. I mainly use Facebook to interact with family and family friends. In my opinion social media is what you make of it. If I choose to allow social media to distract me, it will.” The student continued by saying “Social media often distracts me when I am outside of the classroom. I try my hardest not to use social media in the class.”

Furthermore, collegiate aviation students do not perceive that social media enhances their academic performance, but they do use social media in their everyday lives. Most students identified that they limit their time spent on social media during class and considered it a distraction during class. A student wrote, “I believe that social media is a complete distraction during class. I often see peers using their electronic devices while in class, doing things that are not relevant to the class.”

The One-Way ANOVA suggests that there is no statistical differences between students that identified their aviation majors as aviation management, professional pilot, aviation safety, air traffic control, or other when asked about their perception of social media negatively affecting their academic performance. The researcher was not surprised by this One-Way ANOVA data. Collegiate aviation students surveyed believe the problem is the specific use and purpose of social media activities that makes the difference. Most conveyed social media in moderation is acceptable, but believe overuse of social media interferes with studying and focus. Interestingly, multiple students in the personal comment section suggested that they use social media as an outlet for study breaks, but if they do not moderate their usage, the effects are negative on their academic performance. In regards to moderation of social media, one student in the personal comment section wrote, “I know people who can’t go without social media, but if you aren’t obsessed you’re fine.”

Although the majority of students do not believe social media affects their overall academic performance, almost half (49%) indicated that social media affects their ability to focus and studying habits. Some students identified that social media distracts them more if they are alone or if they cannot be easily detected in a large class. A student wrote in the personal comments “Social media affects my studying habits when I am alone. It does not affect me in class. Most of the time my classes are usually too small and I do not want to be seen by my professor not paying attention. However, I noticed in a bigger class, I want to be on my phone more.” Students additionally expressed concern that if they access social media too much that it takes away valuable time that could be used to their benefit and affects their GPAs. An additional student wrote “I see it as a distraction, the more time I’m on social media the less time I am working on my school work.” It is also clear the majority of students did not see any benefit from the usage of social media in the classroom and that they rarely use social media for college related information.

Conclusions

In conclusion collegiate aviation students' primary concern when answering the research questions is the specific use and purpose of social media activities as well as using social media in moderation at the appropriate times. To conclude, it is important to remember that social media is merely a vessel for concepts that have been around for decades--communication and connections. How collegiate aviation students use these sites makes all the difference on their GPAs and academic performance.

Recommendations

Based on the results and conclusions of this study, the author offers the following recommendations. A further study is recommended to compare the effects of social media on non-collegiate aviation student s' GPA and overall academic performance compared to the effects of social media on collegiate aviation students' GPA and overall academic performance.

An additional study is recommended to investigate and compare the effects of different social media platforms that could be linked differently to collegiate aviation students' GPA and academic performance. For example, a further study could compare students who primarily use Twitter vs. students who primarily use Facebook to investigate if a difference exists on collegiate aviation students' GPA and academic performance based on what social media source they primarily utilize.

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