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# PAPERLESS DEBATE: THE WAVE OF THE FUTURE

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PAPERLESS DEBATE: THE WAVE OF THE FUTURE

Michael B. Greenstein

Educational Leadership Doctoral Program

Submitted in partial fulfillment

of the requirements of

Doctor of Education

in the Foster G. McGaw Graduate School

National College of Education

National Louis University

April, 2014

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## DIGITAL COMMONS DOCUMENT ORIGINATION STATEMENT

This document was created as *one* part of the three-part dissertation requirement of the National Louis University (NLU) Educational Leadership (EDL) Doctoral Program. The National Louis Educational Leadership EdD is a professional practice degree program (Shulman et al., 2006). For the dissertation requirement, doctoral candidates are required to plan, research, and implement three major projects, one each year, within their school or district with a focus on professional practice. The three projects are:

- Program Evaluation
- Change Leadership Plan
- Policy Advocacy Document

For the **Program Evaluation** candidates are required to identify and evaluate a program or practice within their school or district. The “program” can be a current initiative; a grant project; a common practice; or a movement. Focused on utilization, the evaluation can be formative, summative, or developmental (Patton, 2008). The candidate must demonstrate how the evaluation directly relates to student learning.

In the **Change Leadership Plan** candidates a plan that considers organizational possibilities for renewal. The plan for organizational change may be at the building or district level. It must be related to an area in need of improvement, and have a clear target in mind. The candidate must be able to identify noticeable and feasible differences that should exist as a result of the change plan (Wagner et al., 2006).

In the **Policy Advocacy Document** candidates develop and advocate for a policy at the local, state or national level using reflective practice and research as a means for supporting and promoting reforms in education. Policy advocacy dissertations use critical theory to address moral and ethical issues of policy formation and administrative decision making (i.e., what ought to be). The purpose is to develop reflective, humane and social critics, moral leaders, and competent professionals, guided by a critical practical rational model (Browder, 1995).

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## **ABSTRACT**

This paper details a complete program evaluation of a high school debate team's transition from debating with paper to paperless debate. The study examines if switching to debate without paper has improved the success of the debate team by focusing on the team's winning percentage, the cost of debate travel and participation, as well as the debaters' views of the ease of debating before and after the paperless transition. The paper concludes that the transition was indeed a success, because it increased the team's win percentage (though not by a statistically significant margin), saved the team thousands of dollars, and made debate easier for students.

## PREFACE

Conducting a program evaluation project aided my growth as a leader in numerous ways. Often times, administrators implement changes without taking the time to determine if the changes have been valuable or even have made a problem worse. Engaging in the process of a program evaluation has made me understand the importance of following-up initiatives and changes with study and evaluation.

In particular, this project evaluation was extremely meaningful because the entire process was an organic effort that I created and carried out from start to finish. That is to say that my program evaluation was not merely an exercise in going through the motions of conducting an evaluation of another's work; but instead, this process was an authentic attempt to determine if a large programmatic change (the first I made as an educational leader) was indeed the correct decision. The actual process aided me in the development and sharpening of many skills that I otherwise would not have focused on given the nature of the others tasks I must accomplish as part of my job. This program evaluation re-kindled the tasks and skills needed to create non-biased interview questions, to gather and organize large quantities of data, and to conduct a statistical analysis of data.

Interestingly, although the original program change only impacted students, they were excited to see that I cared enough about their success in debate to examine if the original change was a good idea. My guess is staff and faculty alike would have similar reactions because it seems like follow-up is not the norm. Most professional development or school and district initiatives are "flavor of the month" approaches where administrators engage in these meetings and activities because they have to without much regard for determining if they were valuable.

This process also prepared me to be a district level administrator in two ways. First, it helped me learn that reflection is important. In the most broad sense, that is what a program evaluation is; a reflection on a program. Even if one does not go through the process of a full-scale program evaluation, it is still important to take time to reflect on decision-making and process. Second, I learned it is okay to make mistakes. While it turned out that this program change was ultimately a valuable one that will not always be the case. Oftentimes the failure to change or fix a mistake that was made makes it worse than making mistakes to begin with.

## PAPERLESS DEBATE: THE WAVE OF THE FUTURE

	Page
Table of Contents	
Abstract.....	i
Preface.....	ii
Table of Contents.....	iv
Introduction.....	1
Purpose.....	2
Rationale.....	3
Goals.....	3
Primary Research Question.....	4
Literature Review.....	6
Methodology.....	10
Research Design Overview.....	10
Participants.....	11
Data Gathering Techniques.....	11
Data Analysis Techniques.....	12
Findings and Interpretation.....	14
Budget Data.....	14
Win/Lose Percentage Data.....	17
Survey Data.....	19
Judgment and Recommendations.....	23
Judgment.....	23
Recommendations.....	24
References.....	27
Appendix A – Checked Bag Costs.....	29
Appendix B – Rental Car Costs.....	30
Appendix C – Average U.S. Gas Prices 2009-2012.....	31
Appendix D – T-Test People in Rental Cars.....	32
Appendix E – Average Win Percentage.....	33
Appendix F – T-Test Average Win Percentage.....	34
Appendix G – Student Survey.....	35
Appendix H – Survey Results.....	39



## INTRODUCTION

At the beginning of the 21<sup>st</sup> century, a debate team from Whitman College decided to engage in traditional policy debate without using paper. At the time, this action was both unheard of and revolutionary. Before the 1980s, debaters put individual facts on index cards and brought them up with them while they gave speeches. As technology advanced and especially with the advent of the internet, debaters were able to conduct much more research and as a result, from 1980 through 2011, policy debaters in both high school and college required hundreds of pounds of paper to debate. Policy debate is a two-on-two activity and each two-person team would carry three to eight 50-pound large plastic bins filled with paper that served as evidence for their arguments. The amount of tubs a team brought with them roughly corresponded to their skill; the better the team the more arguments they could make and were prepared to answer. After the team from Whitman demonstrated it was possible to debate without paper, a few other teams tried to make the transition to paperless; however, an overwhelming majority were hesitant because of the technology paperless debate requires.

Paperless debate necessitates each two-person team to have three laptops: one for each team member to store evidence and read speeches and another for the other team to view each paperless team member's speeches as they read them. It also demands online and computer-generated research, the scanning of old paper files into a computer, and the conversion of the old file's format from portable document format (PDF) to Microsoft Word so the old files are compatible with new files created on the computer.

Since 2003, many students began using laptops to type up portions of their speeches and a number of coaches and judges chose to flow on laptops.<sup>1</sup> As a result, the debate community is now quite familiar and comfortable with the idea the use of laptops in debate.

### **Purpose**

The purpose of this study was to conduct a program evaluation of the debate team after its transition to paperless debate. My intention was to determine if switching to debate without paper had improved the success of the debate team. Specifically I wanted to see if the transition increased the team's winning percentage compared to debate with paper. I also wanted to examine whether or not the transition increased or decreased the cost of debate travel and participation. Lastly, I intended to see if the debaters themselves found debate easier when debating without using paper compared to when they debated with paper.

Although the primary purpose of this study was to gather and analyze data for myself as the Director of Debate, this study also had two other objectives. First, I would report my findings to my school, the district, and the foundation that awarded my team the grant to make this policy change possible. All the aforementioned parties have an interest in knowing whether the switch to paperless debate was beneficial. Second, my hope is that the results of this study can inform other high school and college debate teams about whether a paperless program is worthwhile. Further, this program evaluation may serve as the basis for further inquiry into paperless debate on a larger scale or guide others in research endeavors within or close to this subject.

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<sup>1</sup> In policy, debaters speak very quickly sometimes as fast as 600 words per minute. "Flowing" is the term for taking notes on speeches while students talk at this rapid rate. Flowing is a skill that can take years to develop; in fact, many high school students are not capable of flowing well until they have three or four years of experience in competitive high school debate.

## **Rationale**

This program evaluation focuses on the paperless transition of the debate team at North Shore high school<sup>2</sup>. North Shore has a rich debate tradition and historically has been one of the most successful debate programs of all time winning more National Forensic League championships and the Tournament of Champions more than any other school in history. I am the Director of Debate at North Shore high school. In the fall of 2009, on behalf of the North Shore debate team, I applied for and the North Shore Education Foundation<sup>3</sup> awarded a grant to the debate team to help pay for the transition to paperless debate. Thus I had a vested interest in knowing whether or not North Shore's paperless transition had been beneficial in terms of team performance.

Aside from my desire to discover if the North Shore debate team's paperless transition had been successful, District 123<sup>4</sup> and the administration at North Shore both had a yearning to know whether the policy change for the debate team has resulted in improvements. The district and school were both extremely supportive of the debate team financially and otherwise. For these two groups, it was important to know if their investment was paying off, especially in lieu of a major debate team restructuring. Lastly, the North Shore Education Foundation follows-up on its grant awards and expects detailed analysis to determine if its aid was worthwhile as well as to raise money for future grant opportunities.

## **Goals**

Regardless of how one defines student achievement, competitive policy debate can be one of the best academic endeavors students undertake to improve it. A quantitative study by

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<sup>2</sup> North Shore High School is a pseudonym.

<sup>3</sup> North Shore Education Foundation is a pseudonym

<sup>4</sup> District 123 is a pseudonym

Allen, Berkowitz, Hunt and Loudon (1999) shows a strong correlation between improvements in critical thinking from students who competed in high school debate in comparison with students who had no debate experience. Yale professor Minh Luong (2000) indicated:

debate has significantly increased the success rate of college applicants at all schools which track such data. State and national award winners have a 22% to 30% higher acceptance rate at top tier college and being captain of the debate team [‘]improved an applicant’s chances by more than 60% compared with the rest of the pool[’]. . . [t]his is significantly better than other extracurricular activities that tend to recruit from the same pool of students as forensic teams such as school newspaper reporter (+3%), sports team captain (+5%), class president (+5), and band (+3). Even without winning major awards, participation in speech and debate develops valuable skills that colleges are seeking out and that is reflect in the above average acceptance rate (4%). Colleges and universities today are looking for articulate thinkers and communicators who will become active citizens and leaders for tomorrow. (p.4)

Recent studies also support the aforementioned claims; Peters (2009) found a strong positive correlation between participation in competitive debate and high standardized test scores, and Briscoe (2009) found that participation in competition enhances the ability and desire of students to engage civically and become better democratic citizens.

Despite the number of teams that have made the transition to paperless debate, there is no evidence of a study to determine whether or not paperless debate is beneficial for the debate students or for the success of programs. The lack of evaluation of paperless debate is alarming because if paperless debate makes it harder to debate or makes students worse at debate, it can seriously limit the benefits that debate has for students. Therefore, I hope to begin an inquiry about whether or not paperless debate has had a significant impact on program success and/or the ease at which students can debate.

### **Primary Research Question**

For this study, the primary research question was to determine whether North Shore debate team’s transition to paperless was successful. For a debate team, three different issues

determine if a program initiative is successful. First and most importantly, did the program change result in a greater percentage of wins for the entire debate team? Second, did the program change make debate easier or more difficult for debaters? This includes ease of researching, creating files, putting speeches together with an allotted amount of preparation time, giving speeches, organizing and maintaining files, traveling to tournaments, and traveling at tournaments. Third, did the program change result in more or less total costs for the debate team?

These three secondary research questions guided the answer to my primary research question because the answers would determine if paperless debate is a change I should have maintained. If I found that the debate team lost more debates because of the transition to paperless, the team should go back to debating with paper. If I found that paperless debate was too difficult for students, it may have incentivized them quitting or hindered the educational value of debate for them. If I found that debating without paper raised the costs of debate substantially, the school or district might not have been willing to support the program. Relevant stakeholders and I would likely only have seen the program change as successful if paperless resulted in a greater winning percentage, easier debate for students, and decreased costs.

## LITERATURE REVIEW

Despite the overwhelming trend of both the high school and college debate community to make a switch from debating with paper to paperless, almost no one has conducted research or published on the subject. Perhaps most shocking, the little that people have written on paperless debate does not meet standards of high quality research or publication in peer reviewed journals. Moreover, no one has written a book on paperless debate. With this literature reviews I aim to examine and discuss the minimal work that people have written on paperless debate specifically as paperless debate relates to trends in the transition to paperless debate, the creation and organization of paperless transitions, and the effect of paperless on debate quality, cost savings, and environmental impact.

Aside from the Whitman College debate team, the first major swift to paperless debate amongst high school and college debate programs occurred during the 2009-2010 debate season. In fact, the New York Times published an article that estimated twenty-five percent of the college debate community switched to paperless debate during that season (Brown, 2010, ED 24). The author of this article interviewed several college coaches to determine paperless trends and concluded that although a few more teams would likely become paperless it would become a while before a majority of the college debate community switched over to paperless debate (Brown, 2010). The author found that some college coaches believed that “paperless debate was a waste of time” and that some believed their programs “[would] not be changing anytime soon” (Brown, 2010).

The only other published work people conducted on trends of paperless debate directly disputed the claim that it would be a while before much of the college community would become paperless. In an article published in a forensics journal, Greenstein and Harrigan (2011) indicated

that “the trend toward paperless debating is likely to continue for the foreseeable future” and that by the start of 2011 “[a] large number of college and high school Policy programs [had] made a complete conversation to paperless.” According to the little scholarship on paperless debate, there are two major reasons I speculate coaches would not make the transition. The New York Times (2010) article on paperless debate indicates that one of the biggest fears coaches have about going paperless is that the technology required to engage in the practice will fail. The article quoted a debater from Liberty University who recalls a time when “[i]n the middle of a critical argument, his partner’s laptop flashed what he called ‘the blue screen of death’ and lost power. By the time it rebooted, Liberty’s carefully assembled argument had vanished” (Brown, 2010, ED 24). The Tualatin debate team located in Oregon maintains a debate blog where one of the authors discusses the other largest obstacles for people switching to paperless: the cost of providing or making sure every student on the team has a computer (Speech in Transition, 2010). However, both the author of this blog (2010) and Greenstein and Harrigan (2011) encourage coaches interested in a switch to paperless debate to apply for grants from government agencies, education foundations, and school foundations, to decrease the initial start-up cost associated with making a transition. While no study has been done on the factors that have motivated or compelled debate coaches to transitions to paperless debate, it is possible that award grants is a strong reason or at least a partial reason.

Far and away the area where debate coaches have written the most about paperless deals with the process by which a team can make the transition to paperless debate and the way to organize a squad after it has gone paperless. Greenstein and Harrigan (2011) to date have published the most comprehensive piece on the subject of how coaches can conduct the transition to paperless by providing tips on obtaining cheap computers, producing electronic

files, managing electronic backfiles, and utilizing dropbox and MiFi technology. In another work, Harrigan (2009) also provides coaches and students with a guide for creating electronic evidence including the use of indexes, highlighting evidence instead files instead of just underlining them, and using more dividers within the files to separate arguments. Aside from this article, most of the other work on this subject focuses on organization of paperless debate. Walker (2010) interviewed the Wake Forest debate team and noted that students praised paperless as an organizational tool. Neighbors (2009) indicates that the key to squads organizing paperless files adequately is to create uniform naming conventions so students can search for and access various files quickly.

Another focus of writing on paperless debate points to some of its potential benefits. The New York Times (2010) article about paperless notes that Emory University will save \$10,000 a year because they no longer have to make paper copies of evidence for all their debaters. Walker (2010) has also noted a huge cost savings of switching to paperless in that when teams take flights to travel to tournaments they no longer have to pay to check many 50-pound bins of paper evidence. Both the New York Times article and the Walker article also briefly make the claim that paperless should decrease the environmental footprint of debate, but do not provide much information about why this is the case. Again Walker makes the claim that paperless makes travel more efficient and debate organization more simple for students, but does not provide a warrant why or explanation how.

Debate coaches and students have blogged on paperless debate, but each post tackles isolated unrelated subjects. Layton (2009) blogged about various equity concerns that may arise when a paper team debates a paperless team. He makes the case that each team could gain various advantages but would have to seek them out by intentionally trying to use the mechanism



they debate with to aid their side. For example, a customary norm in debate is for the team speaking to hand their opponents the evidence they are reading as soon as they are done reading each piece of evidence at various points throughout the debate. If a paperless team debates a paper team without a computer, then the paperless team could opt to withhold evidence from the other team until after the speech is over. In another blog, Mosley-Jensen (2009) posts about whether or not it is ethical for paperless and paper teams to use the means by which they debate to help them win debates. While he does not make many conclusions, he does raise interesting considerations for the time when he made the post on the blog; for instance, the scenario I detailed above. In a completely unrelated blog post, Neighbors (2010) argues that debate teams should use internet based documents instead of Microsoft Word as the platform by which teams should conduct paperless.

After a review of the scant literature on paperless debate, it is clear much more research and scholarship on the subject are needed. What little publication does exist is not comprehensive and often lacks appropriate research methods or any evidence to support arguments or even make factual claims about paperless. What is most alarming is that despite the lack of research or publication on any aspect of paperless debate, almost every single high school and college programs that competes nationally has switched to debating without the use of paper. While by no means coming close to completing all the needed work on paperless debate, this program evaluation hopes to contribute to the literature base by adding to the area of paperless effectiveness as it relates to cost savings, environmental impact, debate effectiveness, and travel ease.

## **METHODOLOGY**

### **Research Design Overview**

To conduct my program evaluation I gathered data primarily by analyzing North Shore's debate team expenditures from the 2009-2010 and the 2010-2011 season, analyzing the win and loss record of each student before and after North Shore debate's switch to paperless, and surveying all the students on the North Shore debate team who have experienced both debate with paper and paperless debate.

Before I go into more detail about my methodology, it is important to briefly discuss the stakeholders of my study. The primary stakeholders were the debate team and the North Shore administration. The debate team's goals were to win debates and become better at debate. If paperless debate hindered either of these goals, then the team would not be happy with the policy change, and it would have diminished the chances of individual team members' success. The administration at North Shore wanted the team to win, its students to have enjoyed debate, and would have wanted to achieve both of these goals without spending too much money. The administration at North Shore was also ultimately in charge of the debate program and determined whether it should continue to fund and support it. Other subsidiary stakeholders include the North Shore Education Foundation and the taxpayers of the town where North Shore high school was located. The North Shore Education Foundation had an interest in knowing their grant award was beneficial, and the taxpayers who live in the district likely did not want the district to waste their tax dollars on program changes that were ineffective.

## **Participants**

The participants of my study were all the students on the North Shore debate team who have engaged in both paper and paperless debate while at North Shore. This population had the potential to shed light on the ease or difficulty of paperless debate. The rest of the study primarily looked at win and loss records over two full years of debate for these students as well as budget spreadsheets and other documents to determine answers to other research questions.

## **Data Gathering Techniques**

I collected three types of data for my program evaluation. First, I examined the budget of the debate team from the year before the paperless transition (2009-2010) and the year after the paperless transition (2010-2011) to determine if the transition resulted in a cost increase or decrease. Specifically, I looked at baggage fees associated with flight costs, rental car costs based on the size of the rental, and paper copy costs. These are the three areas where the transition to paperless would change the costs to support the debate team. Second, I looked at the win and loss record of each individual debater from the year before the paperless transition (2009-2010) and the year after the paperless transition (2010-2011) to determine whether there was a significant change in average win percentage for the entire team. Lastly, I surveyed all the North Shore debaters who have debated both with and without paper to gather data on the ease or difficulty of debating with and without paper. This survey included a variety of questions about researching, creating files, putting speeches together with an allotted amount of preparation time, giving speeches, organizing and maintaining files, traveling to tournaments, traveling at tournaments, and perceptions about paperless debate. Three debate team members graduated from North Shore in 2011 and began college in the fall of 2011; therefore I sent them each a

survey to make certain I got feedback from the entire population of students who have debated both with and without paper at North Shore.

### **Data Analysis Techniques**

Each secondary question I asked required a slightly different type of data analysis. The analysis of the budget data was the easiest part of my study. I merely had to compare the total cost of debating with paper to the total cost of debating without paper and remove all the aspects of spending that remain the same regardless of use of paper. After these basic calculations I determined if paperless increased or decreased costs compared to debate with paper.

The second type of data analysis I conducted was comparing the average team win percentages from the year before and after the paperless transition at North Shore. To conduct a meaningful analysis of this data, I used a t-test because this type of test compares the means of two variables. It determined the difference between the two variables for each case and tested to figure out if the difference in average was statistically significant. In other words, a t-test allowed me to determine if the transition to paperless debate created a statistically significant difference in average win/loss percentage.

In addition to the two previous type of data analysis I discussed, I needed to analyze my survey data (see Appendix G). The first way I examined the survey data is by creating frequency tables for each survey question. This enabled me to describe how responses to my survey were distributed along different categories of questions. After this, I engaged in tabular analysis of two or three questions to describe potential relationships between various items in the survey. The key to this part of my analysis was to prioritize essential questions items and group categories based on the individual item analysis I conducted. After I went through these processes, I “ransacked” the data to try to discover other relationships that existed. Lastly, I looked for

relationships between certain answers to questions and common characteristics of the participants.

After I completed my data analysis and drew some conclusions, I presented the data. There are two ways I did this. First, I offered my actual program evaluation paper to stakeholders who were interested in looking at it. Second, I put together a formal presentation on my discoveries and invited the North Shore administration as well the participants of the study. In both the paper and presentation I showed charts and graphs of data, explained how I analyzed data, as well as walked people through how I came to various conclusions.

## **FINDINGS AND INTERPRETATION**

### **Budget Data**

To evaluate the North Shore debate team's transition to paperless debate, I collected and analyzed three types of data: budget records, win percentages, and a survey of students. For a debate team that travels nationally, the transition to paperless debate should affect two aspects of the budget: travel and copy costs. If a team uses paper files and flies to a tournament, that team has to pay checked baggage fees for every 50-pound tub of paper they bring with them to a tournament. If the tub weighs more than 50 pounds (which is fairly common), depending on the airline, there is usually a higher charge to check the tub. In both the 2009-2010 and the 2010-2011 seasons North Shore traveled exclusively on United Airlines. At that time, the United baggage fee policy was that the first piece of luggage each person checked cost \$25 and the second tub each person checked cost \$50. To maximize savings, I would have every individual on the trip (coaches included) check an initial tub even if the tub did not belong to that individual. If there were remaining tubs, then each individual would check a second tub and so on. During both seasons no tub weighed more than 50 pounds. A chart of the total cost of checked tubs per national trip for both the 2009-2010 and 2010-2011 seasons is provided in Appendix A.

In terms of checked bag fees, it is clear that paperless debate saves money. In total North Shore's debate team saved \$5600 from the 2009-2010 to 2010-2011 debate season. At one tournament the team saved as much as \$1250 and even at the Montgomery Bell Academy (MBA) tournament where North Shore only brought three students to compete, the team still saved \$200. When looking at these cost savings, it is important to note that these checked bag fees apply only to tubs and not to any additional luggage such as clothes or toiletries. Both the

year before and the year after the switch to paperless debate, North Shore's debate team had a strict policy that students and coaches were not allowed to check any luggage that was not a tub and therefore needed to pack clothing and toiletries into luggage they could carry into an aircraft. This illustrates the \$5600 in cost savings comes only from tubs; no other types of checked bags.

Purchasing rental cars are another cost debate teams must pay regularly when they travel nationally. With tubs, teams have to regularly rent larger vehicles to provide room for tubs filled with paper evidence. For example, in 2009 at the Greenhill tournament in Dallas, Texas, although North Shore only brought two coaches and four students, instead of renting a seven-passenger minivan, North Shore had to rent a 12-passenger vehicle to make room for all the tubs. The total costs of rental cars as well as how many people on North Shore's team traveling in rental cars on each trip for the 2009-2010 and 2010-2011 seasons is provided in Appendix B.

The rental car cost data illuminates many interesting findings. At first glance, one may make the assumption that in terms of rental car costs, paperless debate adds costs to traveling a debate team nationally. After all, the total spent on rental cars increased by \$57.39 from the 2009-2010 season to the 2010-2011 season. However, even with slightly higher costs for the 2010-2011 season, a closer examination of the data favors paperless debate when it comes to the cost of rental cars. If one were to examine only total rental car costs, a few factors can explain the cost increase from year to year. Included in the rental car costs is the cost of gas for the rental cars. Gas prices increased dramatically from 2009-2012 in the United States with a huge price spike between 2010 and 2011 (a graph of the increase is provided in Appendix C). Moreover, for most of 2009-2010 season the debate team did not purchase insurance for rental cars. In the middle of the season the district office instructed debate coaches to start purchasing insurance for each rental car. So there was a major cost savings for about half of the 2009-2010 season that did

not occur in the 2010-2011 season. Therefore although the total cost of renting cars did increase for the team in 2010-2011, the aforementioned factors demonstrate that there was a cost savings for rental cars the year after the North Shore debate team went paperless.

Aside from rising gas prices and the added cost of insurance, another factor that can explain the cost increase is that in the 2010-2011 season five more students traveled in rental cars at an increased cost of only \$57.39. To determine if the increase in students at national tournaments from 2009-2010 to 2010-2011 was a statistically significant increase; I conducted a standard t-test with a 95% confidence interval (the data and mathematical procedures for the t-test are provided in Appendix D). The results of the t-test show that at a 95% confidence interval the increase in students riding in rental cars from the 2009-2010 to the 2010-2011 was a statistically significant increase. The bottom line is that despite a minimal cost increase explained by an increase in gas and insurances prices, the team was able to travel five more students after its switch to paperless debate indicating paperless can provide teams the ability to travel more people for less cost.

Although it has nothing to do with monetary costs, another added and more important benefit of switching to paperless with regard to rental cars is the impact on student safety. During the 2009-2010 season the North Shore debate team rented 12-passenger vans, almost one-third of the time to accommodate the transportation of tubs. During the 2010-2011 season the North Shore debate team rented no 12-passenger vans. Numerous state and government officials have conducted studies on the safety of transporting students in 12-passenger vans compared to other vehicles that transport fewer students. According to one such report by George Washington University, “[t] he weight of the van, particularly when fully occupied, causes the center of gravity to shift rearward and upward increasing the likelihood of rollover...[and] [t]he shift in



the center of gravity will also increase the potential for loss of control in panic maneuvers.” In fact, the risks are so well known that according to the National Association of State Directors of Pupil Transportation Services (2004) “29 states have laws or regulations that prohibit the use of vans for transporting public school students to and from school and school-related activities.” Therefore, by switching to paperless debate and as a result creating conditions in which the North Shore debate team no longer had to rent 12-passenger vans, the transportation of students at tournaments became safer.

Another aspect of the debate budget that paperless debates affects is the amount of copies a team makes. During the 2009-2010 season the debate team made 50,463 copies. The year after the team went paperless it made 16,821 copies (the beginning debates still used paper, which can explain why the team made any copies at all). At half a cent per copy, making 33,642 less copies saved the debate team about \$170 in one year. Aside from cost savings, substantially reducing the number of copies the debate team makes helps the environment by saving trees and decreasing the amount of toner it uses.

### **Win/Lose Percentage Data**

The goal of analyzing the North Shore debate team’s average win percentage for the 2009-2010 and 2010-2011 seasons was to determine if changing to paperless affected the team’s win percentage. I only examined the data of team members who debated with paper during the 2009-2010 season and without paper during the 2010-2011 season. Therefore, this data does not include seniors from the 2009-2010 season because they did not debate for North Shore in 2010-2011 and it does not include freshman from the 2010-2011 season because they had not yet made the transition to paperless debate. The main goal of North Shore’s debate team is to win national titles, not local and regional tournaments. So, while North Shore’s team travels to more than 30

tournaments every year, I only collected win data from the major national contests because the real question to answer is whether the change to paperless helped North Shore at the tournaments that matter most to the team. All the win percentage data from both the 2009-2010 and 2010-2011 season are provided in Appendix E.

The number in the lower right corner of each data chart in Appendix E represents the total weighted average of the team's win percentage at major national tournaments. I used a weighted average to make each individual's performance at each tournament count equally. Alternatively I could have taken an average of the averages at each tournament, but then students who debated fewer times would have had their results artificially count more, which would mean the total team average would not be truly representative of how the team did.

The data clearly illustrate that after the team changed to paperless debate the team's total average win percentage increased by a little more than five percent. To determine if this increase was statistically significant increase, I conducted a standard t-test with a 95% confidence interval (the data and mathematical procedures for the t-test are provided in Appendix F). The results of the t-test show that at a 95% confidence interval the increase in total average win percentage from the 2009-2010 to the 2010-2011 was not a statistically significant increase.

A number of factors that could explain why the change to paperless had no statistically significant increase on the team's total average win percentage. To start, and most simply, it is possible that paperless debate does not increase the ability of a team to win debates. Second, even if paperless debate does make it easier to win debate rounds, since students were in their first year of paperless debate, they still may have been learning how to do it properly and had not yet gained used it to its maximum potential. Lastly, North Shore's team was not the only program in the country to transition to paperless debate during the summer of 2010. If paperless

made debate easier, it would not just have made it easier for North Shore, but for every team that went paperless and therefore everyone gained the same advantage, which would result in no gained benefits versus other teams.

### **Survey Data**

The last piece of data I collected was a 20-question survey of all the students who debated with paper during the 2009-2010 season and without paper during the 2010-2011 season. In total 29 students filled out the survey. The specific survey questions are provided in Appendix G and graphical representations of the survey answers to each question are provided in Appendix H. The results of the survey show that the students overwhelmingly thought paperless debate makes every aspect of debate easier including research, creating files, organizing files, creating speeches, giving speeches, recalling what they said in a speech, maintaining files, in-round preparation efficiency, preparation during a debate, cleaning up after a debate, scouting debates, traveling to tournaments, and traveling at tournaments. The students also overwhelmingly believed that paperless makes them better at debate overall and they enjoyed debate more after the transition to paperless

While a majority of students responded to the survey indicating paperless debate was better and made most every aspect of debate easier, a few students indicated paperless made debate more difficult for them. Two types of questions led to responses by some students indicating paperless had a negative effect on debate overall and various management skills.

Of the 29 students, only two students indicated that paperless made debate more difficult overall. However, when looking at the way these two students responded to all the other questions there is no theme or trend in the responses of the students. One student who indicated paperless made debate more difficult overall also indicated it made various aspects of debate

more difficult including creating a file, orally delivering a speech, managing preparation time, and flowing. However, the other student who indicated paperless made debate overall more difficult indicated that paperless either made various aspects of debate easier or had no effect on him or her. In the case of the first student, it appears that he or she knows exactly why paperless makes debate harder for him or her; it makes creating, preparing for, and giving speeches more difficult as well as impact his or her ability to take notes effectively during a debate. In the case of the second student it appears that despite the belief that paperless either has no effect on or makes aspects of debate easier, he or she just had a feeling that paperless made debate more difficult.

Aside from the effect paperless may have on overall debate, some students believed paperless had a negative effect on management skills in that paperless made it more difficult to create files, organize files, and create speeches. For all the students who indicated paperless debate made any of these three debate tasks more difficult, I looked at their responses to the questions about how paperless affected orally delivering speeches, managing preparation time, in-round flowing, and their belief about the effect of paperless on debate overall. Because pre-round management skills typically have a large impact on in-round debate skills, I did not necessarily find common trends and themes for all cross-sections of data; however, I did find quite a bit of agreement among the responses of these students.

All students who believed paperless made it more difficult to create files also found paperless made orally delivering speeches more difficult, found paperless made in round flowing much easier, and found paperless made overall debating slightly easier. The process by which a student creates a high quality debate file requires the student to understand completely the argument he or she is creating completely. If that creation process becomes harder it would

certainly affect a student's ability to give speeches on those files because he or she will not necessarily have as great of an understanding of the argument. It also makes sense that students who believed paperless made it harder to create files found that paperless made flowing easier because file creation has nothing to do with a student's ability to take notes during a debate. And while some students found paperless made it harder to create a file, they also found that paperless made debate easier overall, which likely means that in the eyes of these students, squads benefit from switching to paperless given what it can do for students in terms of the rest of the aspects of debate.

In addition to the students who found paperless made it harder to create files, some students believed paperless made it harder to organize files. For these students, most found paperless made no difference in flowing and all found paperless made debate slightly easier overall. Similar to the students who thought paperless made creating files more difficult, the group of students who found paperless made organizing files harder did not believe paperless negatively affected their ability to flow and likely believed that the negative impacts of paperless on organizing files should not deter people from switching to paperless given they all believed paperless made debate easier overall. Aside from these two trends, there were no commonalities in the way this group of students answered other questions about paperless.

A group of students also found paperless made it harder to create a speech. These students all found that paperless made no difference in flowing or that paperless made it slightly easier to flow a debate and found that paperless debate made debate slightly easier or much easier overall. Here the result is the same as the other two sub-groups discussed above. Even though some students found paperless made it harder to create a speech, they also found that paperless made debate easier overall, which likely means that in the eyes of these students,

despite the negative effect paperless has on creating speeches, it is still beneficial for squads to switch to paperless given what it can do for students in terms of the rest of the aspects of debate.

From analyzing student survey data, three meta-level general themes are apparent. First, a large majority of these students thought paperless made all or nearly all aspects of debate easier. Second, for the few students who found paperless made an aspect of debate more difficult, they still found paperless made debate easier overall. Third, there is no trend or themes in the responses of the two students who thought paperless made debate more difficult overall. Indeed, the student responses to the survey make a robust case for teams to transition to paperless debate.

## **JUDGMENT AND RECOMMENDATIONS**

### **Judgment**

The purpose of this program evaluation was to determine if the North Shore debate team's transition to paperless debate was successful. Earlier, I outlined three criteria to establish what defines success for program changes made to a debate team. The change to paperless debate would be successful if it increased the team's win percentage, made debate easier for students, and saved the team money. After collecting and analyzing data it is clear that the transition to paperless debate met all three criteria one would use to deem the program change successful.

To start, paperless debate saved the team thousands of dollars by not forcing it to pay checked bag fees at the airport, allowing it to get safer rental cars for more people, and by reducing the cost of making copies. Moreover, the year after the transition to paperless debate, the North Shore debate team saw a five percent increase in the team's average win percentage at the most important tournaments. Lastly, an overwhelming majority of students on the team who debated both before and after the paperless transition found paperless made debate easier for all or nearly all aspects of debating.

While the change to paperless debate satisfied all the criteria I previously established for one to consider it a success, it is important to note that the increase in win percentage from the year before paperless to the year after paperless was not a statistically significant increase. Although this is not a negative result of the program change, it was not a result that I anticipated. Nevertheless, as long as switching to paperless debate did not hurt team's chances of winning and provided other added benefits; people should consider the transition a good and successful change.

## **Recommendations**

Based on this program evaluation I would like to make several recommendations that the North Shore debate coach, other debate coaches, and researchers should consider. First, the North Shore debate team should continue debating without paper. Even if paperless marginally helps their win percentage or does not help their win percentage at all, it will not likely hurt their win percentage, it will save the team money, and it will make debate easier for students. Second, other schools that currently debate with paper should consider seriously a transition to paperless debate. Given how expensive debate can be and the current economic climate, it seems that any program changes that can save money are at the very least worth looking into.

Nevertheless, there is one caveat to the recommendation that debate teams should become paperless. If the debate team does not travel nationally, then switching to paperless debate will not bring with it much if any cost savings because most of the cost savings paperless provides occur when teams fly and rent cars. In fact, while the cost savings of the North Shore debate team easily covered the cost of computers to be a paperless debate team, the cost of going paperless would far outweigh savings if a team does not travel nationally. With that in mind, Greenstein and Harrigan (2011) outline several tips to become a paperless debate team without spending almost any money, so it may be possible for teams that travel only locally and regionally to competitions to gain benefits from switching to paperless debate.

Aside from recommendations for North Shore's debate team and other debate teams, I also have a few recommendations for researchers. Researchers need to conduct more studies of paperless debate on a larger scale. While research in the areas of cost savings or ease of debate could prove beneficial, a focus on research in the area of team win percentage is sorely needed. Given how much of the high school and college debate community has transitioned to paperless



debate, it is somewhat alarming that this paper represents the only known study on the effects paperless debate has on a team's ability to win debates.

Additionally, research is needed on how paperless debate helps or hinders specific debate skills. While my research found very few students believed paperless hindered particular skills, researchers should conduct these studies at a larger scale and not solely based on student opinion, but instead based on quantitative data. The reason this is important is that if studies show paperless hinders a specific skill, it would be easy for debate coaches to focus meetings or practices on students developing that skill. This in turn will help to make teams more successful.

Another area where more inquiry may be interesting is a study of how paperless effects high school debate teams compared to college debate teams. Within a few years most every student who debates in college will have three to four years of paperless debate experience. Comparisons between high school and college teams could shed light on the long-term effects debating without paper has on individual students or entire programs. A comparison between paperless high school teams and college team could also, of course, yield useful data in other areas as well.

Researchers may also want to consider surveying debate coaches in both the high school and college community to gain insights into the effects paperless debate may have on debate team administration. These studies could focus on a number of different topics including budget, travel ease, coaching, and judging. While my research did suggest paperless makes debate team administration easier, most of the data to support that claim comes from the opinions of students and not coaches or debate administrators.

The last area where scholars should consider more study is whether or not first year debate students should start debate with or without paper. Currently, most high school paperless

teams continue to have their first year students debate with paper. This is primarily the case because the cost of computers is expensive and it would be difficult for teachers to require students to have a computer to join the debate team or a debate class. In fact, this requirement may even deter people from wanting to engage in debate. However, recently a few new programs have started their first year debate students without paper. It would be fascinating to study which students are more successful in debate over the long term.

All in all, the results of this study do support the current direction of the North Shore debate team. When reading this program evaluation, it is necessary to consider that I used a small and very specific population. Therefore, while I feel confident that the conclusions I reached are accurate and appropriate for North Shore, people who use this program evaluation to make their own conclusions or take actions for other debate teams should proceed cautiously until researchers do more work in this and related areas.

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**APPENDIX A – CHECKED BAG COSTS**

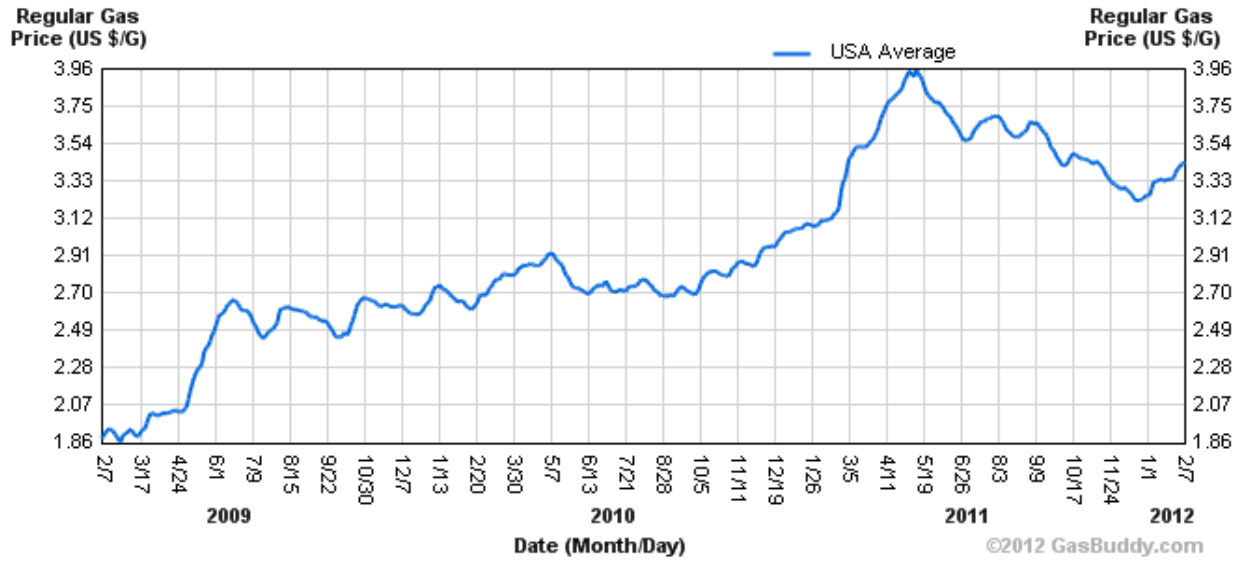
<b>Tournament</b>	<b>2009-2010 Tub Cost (Dollars)</b>	<b>2010-2011 Tub Cost (Dollars)</b>
<b>Greenhill</b>	500	0
<b>St. Marks</b>	850	0
<b>Blake</b>	1050	0
<b>MBA</b>	200	0
<b>Golden Desert</b>	550	0
<b>Emory</b>	550	0
<b>Berkeley</b>	650	0
<b>TOC</b>	1250	0
<b>Totals</b>	5600	0

**APPENDIX B – RENTAL CAR COSTS**

<b>Tournament</b>	<b>2009-2010 Rental Car Cost</b>	<b>2010-2011 Rental Car Cost</b>	<b>2009-2010 People on Trip</b>	<b>2010-2011 People on Trip</b>
<b>Greenhill</b>	844.14	1006.23	7	9
<b>St. Marks</b>	979.43	449.09	11	11
<b>Blake</b>	0	0	0	0
<b>MBA</b>	499.15	332.18	5	4
<b>Golden Desert</b>	531.7	422.77	11	10
<b>Emory</b>	1253.55	1100.47	11	9
<b>Berkeley</b>	1511.87	1520.34	10	15
<b>TOC</b>	870.83	1716.98	5	7
<b>Totals</b>	6490.67	6548.06	60	65

# APPENDIX C – AVERAGE U.S. GAS PRICES 2009-2012

## 36 Month Average Retail Price Chart



## APPENDIX D – T-TEST PEOPLE IN RENTAL CARS

$$t = \frac{\bar{X}_T - \bar{X}_C}{\sqrt{\frac{\text{var}_T}{n_T} + \frac{\text{var}_C}{n_C}}}$$

X = Mean of the number of people

Var = Variance of the number of people

T = Pre-Paperless

C = Post-Paperless

N= Number of people

All numbers taken from data in Appendix B.

t value = 3.234

At a 95% confidence interval the increase is statistically significant if t is over 2.179.

Since our t value is 3.234 which is greater than 2.179 the increase is statistically significant.



**APPENDIX E – AVERAGE WIN PERCENTAGE**

**Pre-Paperless Data**

Tournament	1	2	3	4	5	6	7	8	9	Tourni Ave%
Greenhill	57.1									57.1
New Trier	88.9	62.5	62.5	57.1	66.7	57.1	66.7	66.7	33.3	62.38888889
St. Marks	90.9	66.7	66.7	100		100				84.86
Michigan		57.1	57.1	57.1	33.3	57.1	50	50	33.3	49.375
Blake	81.2			71.4	42.9	71.4	57.1	57.1		63.51666667
MBA										
Golden Desert	88.9				50					69.45
Emory	85.7		66.7			66.7				73.03333333
Berkeley	90.9			50	50	50			50	58.18
State	87.5	50	80			80				74.375
TOC	75									75
Indiv Ave	82.9	59.1	66.6	67.12	48.6	68.9	57.9	57.9	38.9	<b>64.55</b>

Total Weighted A ←

**Post-Paperless Data**

Tournament	1	2	3	4	5	6	7	8	9	10	Tourni Ave
Greenhill	75	75	57.1		57.1	50			50		60.7
New Trier	80			57.1	80	77.8	57.1	57.1	77.8	57.1	68
St. Marks	75	75	50		50		33.3	33.3		71.4	55.428571
GDS			75	77.8	75	62.5	71.4	71.4	62.5	77.8	71.675
Michigan	100	100	88.9	62.5	88.9	57.1	62.5	62.5	57.1	62.5	74.2
Blake	72.7	72.7	75		75	71.4	57.1	57.1	71.4	57.1	67.722222
MBA	85.7	85.7									85.7
Golden Desert						57.1	71.4	71.4	57.1		64.25
Emory	88.9	88.9	71.4		71.4					50	74.12
Berkeley	77.8	85.7	77.8	77.8	77.8	57.1	66.7	66.7	57.1	85.7	73.02
State	100	100	83.3	60	83.3	80			80	60	80.825
TOC	70	70	57.1		57.1						63.55
Indiv Ave	82.51	83.7	70.6	67	71.6	64.1	59.9	59.9	64.1	65.2	<b>69.76</b>

Total Weighted ←

## APPENDIX F – T-TEST AVERAGE WIN PERCENTAGE

$$t = \frac{\bar{X}_T - \bar{X}_C}{\sqrt{\frac{\text{var}_T}{n_T} + \frac{\text{var}_C}{n_C}}}$$

X = Mean of the number of people

Var = Variance of the number of people

T = Pre-Paperless

C = Post-Paperless

N= Number of people

All numbers taken from data in Appendix E.

t value = 1.746

At a 95% confidence interval the increase is statistically significant if t is over 1.984.

Since our t value is 1.746 which is less than 1.984 the increase is not statistically significant.

## APPENDIX G – STUDENT SURVEY

1. Compared to paper debate, paperless debate has made research

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

2. Compared to paper debate, paperless debate has made creating a file

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

3. Compared to paper debate, paperless debate has made organizing files

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

4. Compared to paper debate, paperless debate has made creating a speech

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

5. Compared to paper debate, paperless debate has made orally delivering speeches

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

6. Compared to paper debate, paperless debate has made recalling what you said in a speech

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

7. Compared to paper debate, paperless debate has made maintaining files

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

8. Compared to paper debate, paperless debate has made in-round preparation time efficiency

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

9. Compared to paper debate, paperless debate has made preparing before each debate starts

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

10. Compared to paper debate, paperless debate has made cleaning up after each round

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

11. Compared to paper debate, paperless debate has made scouting debates

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

12. Compared to paper debate, paperless debate has made in-round flowing

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

13. Compared to paper debate, paperless debate has made traveling to tournaments

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

14. Compared to paper debate, paperless debate has made traveling at tournaments

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

15. Compared to paper debate, paperless debate has made debate overall

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

16. Compared to paper debate, paperless debate has made your debate skill

- A. much better
- B. slightly better
- C. the same in terms of better or worse
- D. slightly worse
- E. much worse

17. Compared to paper debate, paperless debate has made you enjoy debate

- A. much better
- B. slightly better
- C. the same in terms of better or worse
- D. slightly worse
- E. much worse

18. The transition to paperless debate was

- A. very easy
- B. somewhat easy
- C. not any different from debating with paper
- D. slightly difficult
- E. very difficult

19. Compared to learning how to debate with paper, learning to debate paperless was

- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

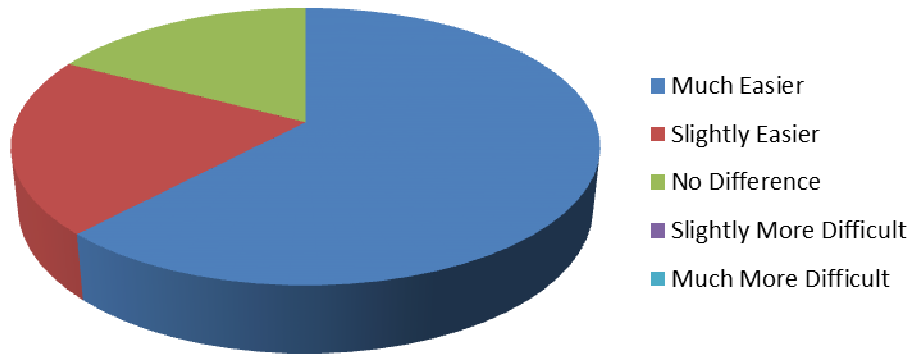
\*\*\*Answer only if you have judged debates\*\*\*

20. Compared to paper debate, paperless debate has made judging debates

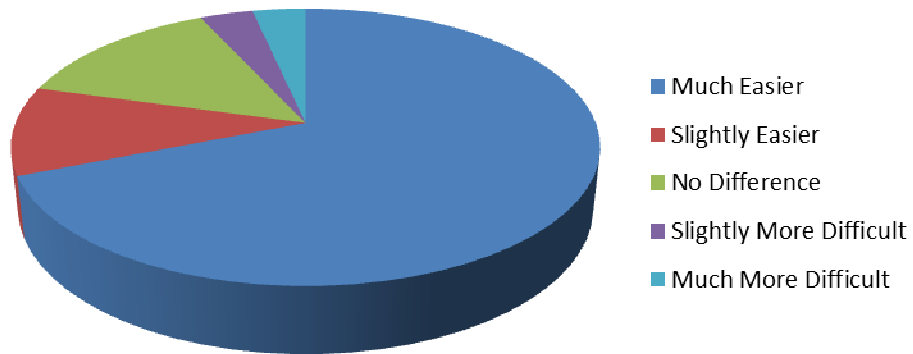
- A. much easier
- B. slightly easier
- C. the same in terms of ease or difficulty
- D. slightly more difficult
- E. much more difficult

## APPENDIX H – SURVEY RESULTS

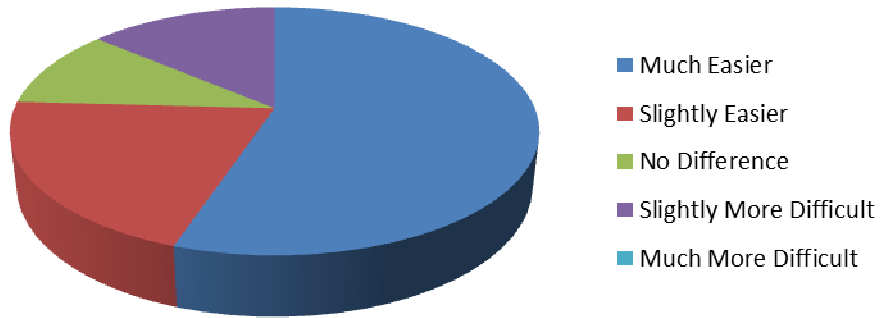
### Compared to paper debate, paperless debate has made research



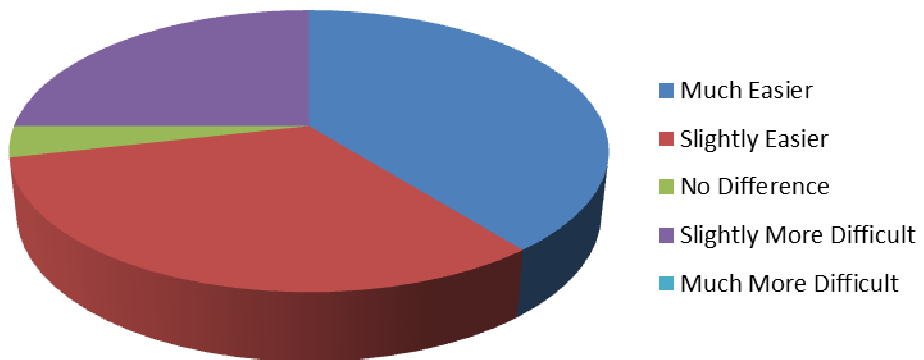
### Compared to paper debate, paperless debate has made creating a file



**Compared to paper debate, paperless debate has made organizing files**

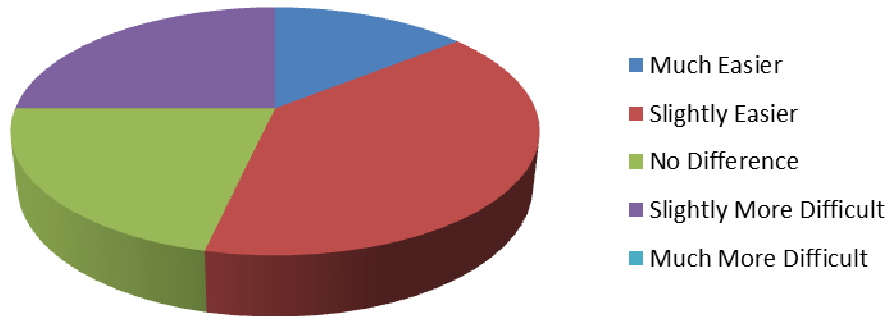


**Compared to paper debate, paperless debate has made creating a speech**

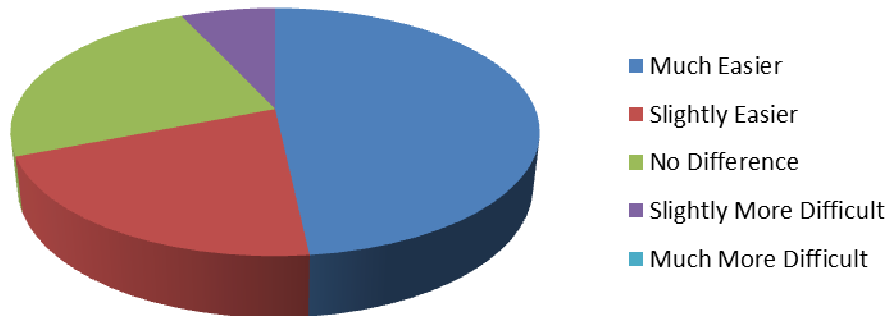




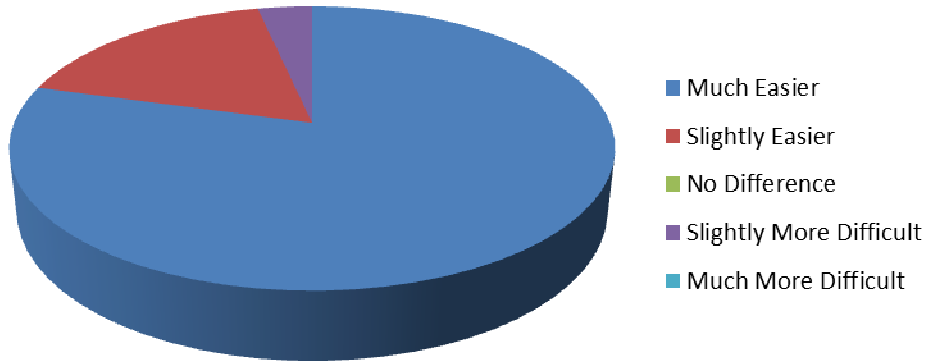
**Compared to paper debate, paperless debate has made orally delivering speeches**



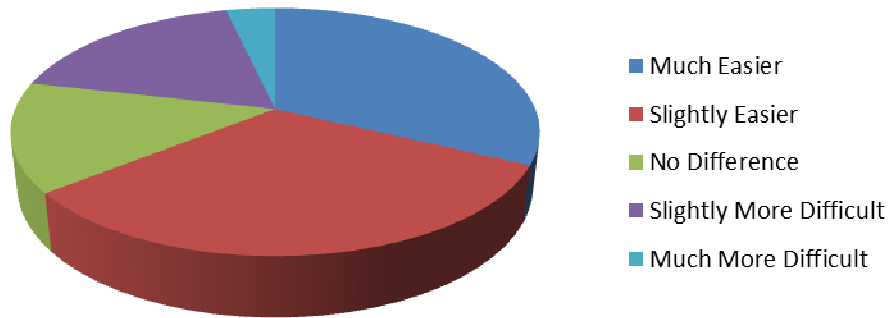
**Compared to paper debate, paperless debate has made recalling what you said in a speech**



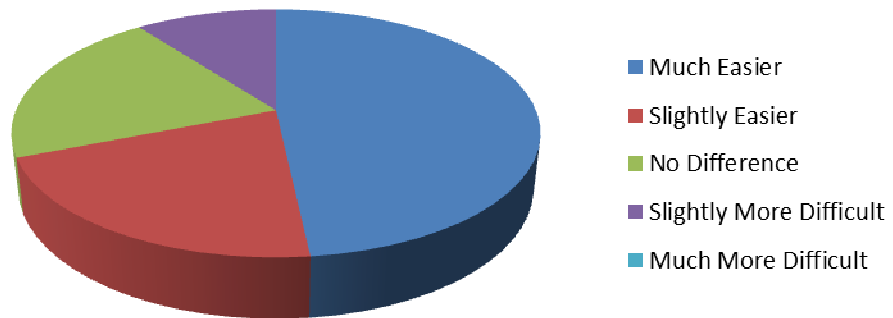
### Compared to paper debate, paperless debate has made maintaining files



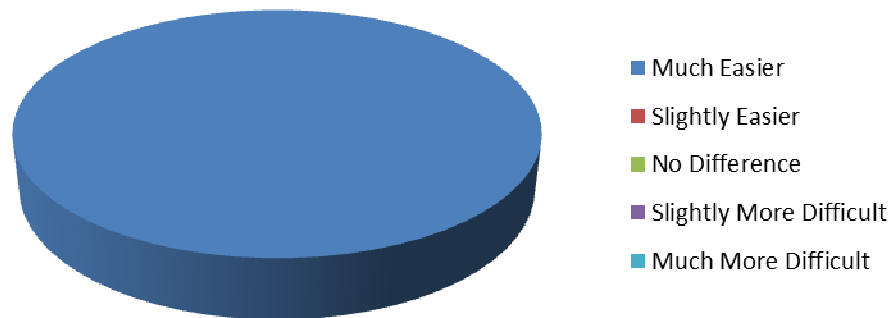
### Compared to paper debate, paperless debate has made in-round preparation time efficiency



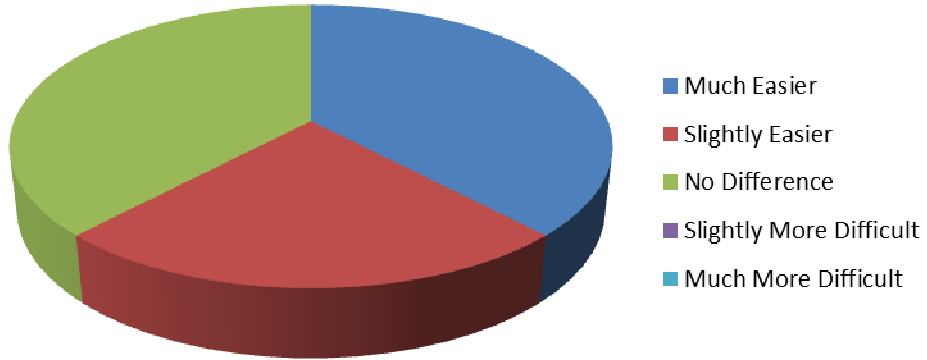
**Compared to paper debate, paperless debate has made preparing before each debate starts**



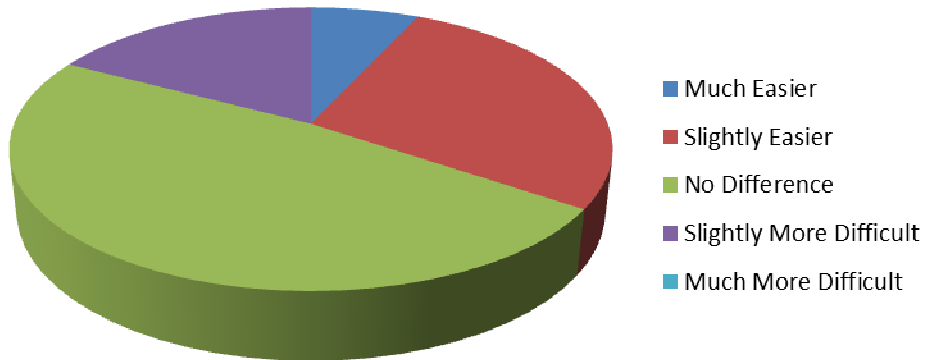
**Compared to paper debate, paperless debate has made cleaning up after each round**



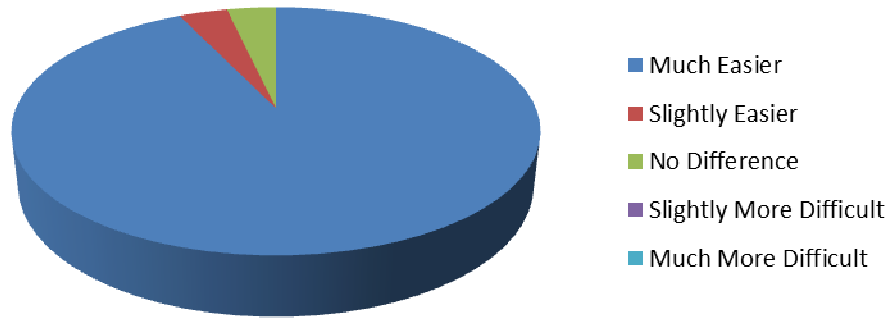
### Compared to paper debate, paperless debate has made scouting debates



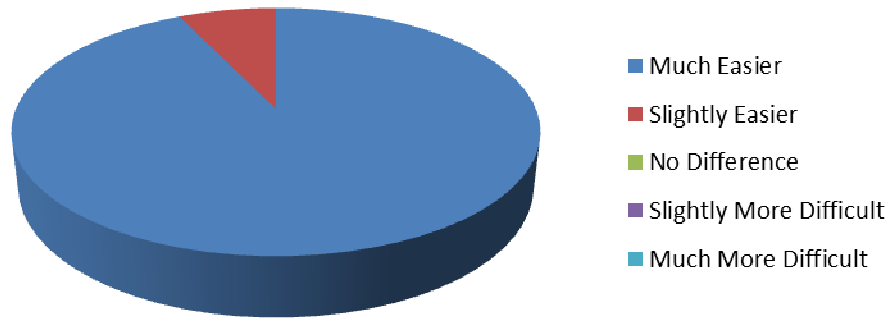
### Compared to paper debate, paperless debate has made in-round flowing



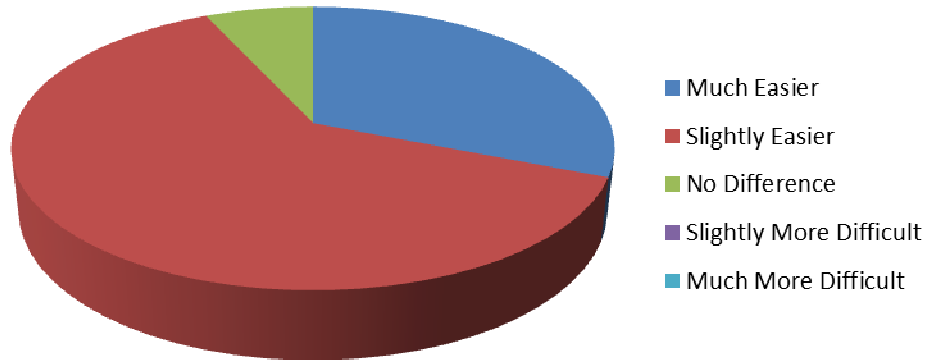
### Compared to paper debate, paperless debate has made traveling to tournaments



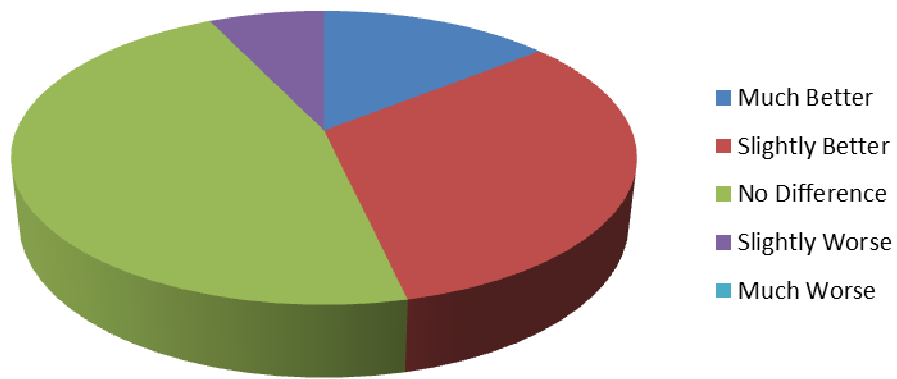
### Compared to paper debate, paperless debate has made traveling at tournaments



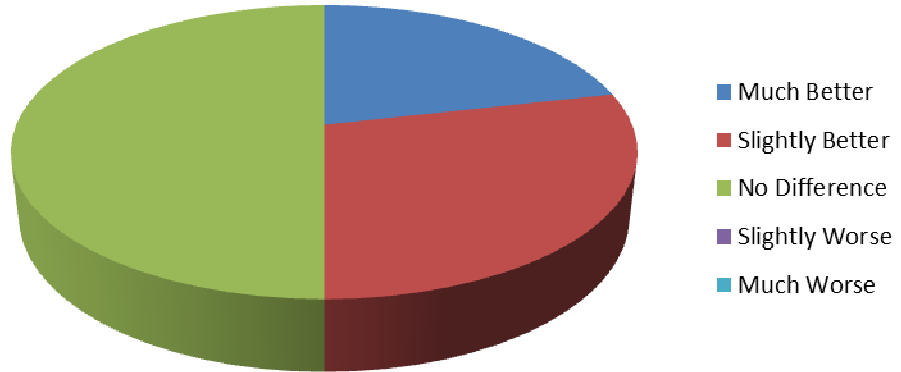
### Compared to paper debate, paperless debate has made debate overall



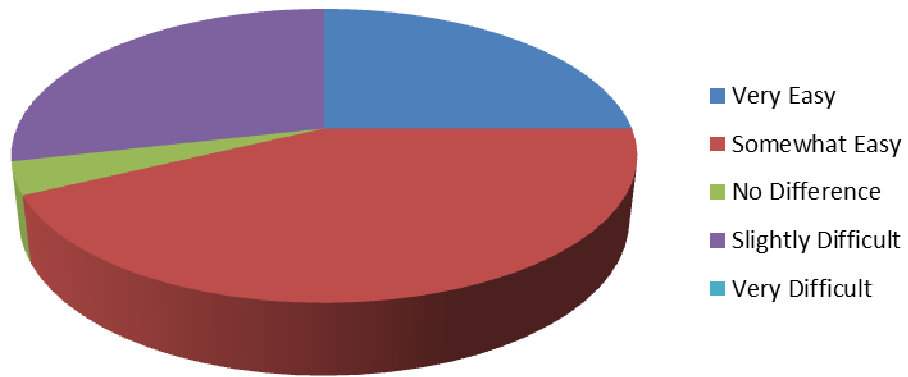
### Compared to paper debate, paperless debate has made your debate skill



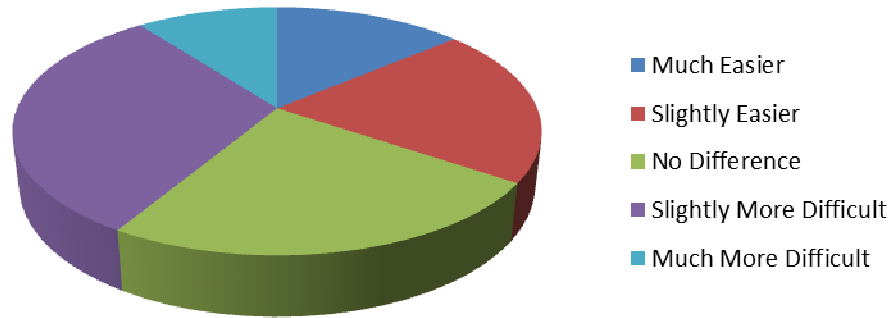
### Compared to paper debate, paperless debate has made you enjoy debate



### The transition to paperless debate was



**Compared to learning how to debate with paper, learning to debate paperless was**



**Compared to paper debate, paperless debate has made judging debates**

