

2001

## Internet Explorer Error Message at Patrick Henry Community College

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**Internet Explorer Error Message at Patrick Henry Community College**

**A Research Paper**

**Presented to the Graduate Faculty**

**of the Department of Occupational and Technical Studies**

**at Old Dominion University**

**In Partial Fulfillment**

**of the Requirements for**

**the Master of Science Program**

**Present by**

**Frank B. Tatum**

**April 25, 2001**

APPROVAL PAGE

Frank B. Tatum prepared this research paper under the direction of Dr. John M. Ritz in OTED 636, Problems in Occupational and Technical Studies. It was submitted to the Graduate Program Director as partial fulfillment of the requirement for the Degree of Master of Science in Occupational and Technical Studies.

APPROVED BY: John M. Ritz  
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5-4-01  
Date

## TABLES OF CONTENTS

	<b>Page</b>
<b>Approval Page</b> .....	i
<b>Tables of Tables</b> .....	iv
<b>Tables of Figures</b> .....	v
<b>CHAPTER I INTRODUCTION</b>	
• Statement of the Problem.....	3
• Research Goals.....	3-4
• Background and Significance .....	4-5
• Limitations .....	5
• Assumptions.....	5
• Procedures.....	5
• Definition of Terms.....	6
• Overview and Summaries .....	6-7
<b>CHAPTER II REVIEW OF LITERATURE</b>	
• Input from Students at Patrick Henry Community College.....	7
• Web Document by Ray Marmelstein.....	7-8
• Web Document by Steve Rizkalla .....	8
• Web Document by Paul Lutus .....	8-10
• Summary and Overview .....	10
<b>CHAPTER III METHODS AND PROCEDURES</b>	11
• Population .....	12

- Instrument Design.....12
- Methods and Data Collection..... 12-14
- Statistical Analysis.....14
- Summary .....14

**CHAPTER IV FINDINGS**

- Introduction.....15
- Survey Questions ..... 15-23
- Summary ..... 23-24

**CHAPTER V SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS**

- Summary ..... 25-27
- Conclusions.....28
- Recommendations..... 28-29

**BIBLIOGRAPHY .....30**

**APPENDICES**

- Appendix A, Internet Explorer Error Message .....31
- Appendix B, Survey Questions.....32
- Appendix C, Cover-Letters..... 33-35
- Appendix D, Follow-Up Letters ..... 36-38

## TABLE OF TABLES

	<b>PAGE</b>
Table 1. Students surveyed .....	15
Table 2. Do you use Internet Explorer .....	16
Table 3. Do you receive the error message shell32.dll .....	17
Table 4. Please record the number of the computer with an error message .....	18
Table 5. When do you use Internet Explorer .....	19
Table 6. How often do you use Internet Explorer .....	20
Table 7. Do you receive the shell32.dll error message when using other software applications .....	21-22
Table 8. Please record any additional information about the error message .....	23

## TABLE OF FIGURES

	<b>PAGE</b>
Figure 1. Do you use Internet Explorer .....	16
Figure 2. Do you receive the error message shell32.dll .....	17
Figure 3. Please record the number of the computer with the error message .....	18
Figure 4. When do you use Internet Explorer .....	19
Figure 5. How often do you use Internet Explorer .....	20

## **CHAPTER I**

### **INTRODUCTION**

Computer end-users at Patrick Henry Community College were experiencing an error message when trying to launch the Internet Explorer browser. This error occurred without warning when users tried to launch the browser to access the Internet. The Internet Explorer browsing software was a vital avenue of students who used distance-learning services from Patrick Henry Community College. Without this software working properly, students at the college would have to return to taking classes on campus. This would defeat the college's vast effort to make education a multi-faceted experience within this educational institution. The faculty at Patrick Henry Community College were complaining that students could not complete assignments on time because the Internet Explorer software was not working properly. The problem has been occurring for about two months, and students were beginning to complain about the inability to complete their assignments in a timely manner.

According to Debbie Dillon, a student at Patrick Henry Community College, she tried to launch Internet Explorer and received an illegal operation error message. When she clicked on the details of the message it displayed " IEXPLORE caused an invalid page fault in module shell32.dll." Teresa Moran, another student, stated that she experienced an illegal operation error message when trying to launch Internet Explorer. She restarted the computer but the problem continued to exist.

Through searching the Internet, the researcher found a document by Roy Marmelstein which stated that he installed Internet Explorer and ran this program for a few months and then received an error — "performed an illegal operation error." When



he checked the error it displayed the following error message, “IEXPLORE that caused an invalid page fault in module shell32.dll.” In addition, he stated that restarting his computer two times did not eliminate the problem. The problem persisted and he could not use Internet Explorer (2000).

By searching another web document by Steve Rizkalla, the researcher found the following statement. It stated that a problem with Internet Explorer on his computer displayed the error message, “Explorer caused a invalid page fault in module shell.dll” error. He stated that he tried to run the patch from Microsoft and received the following error message, “this machine does not require this patch” (2000).

The researcher found a key term to aid the study by searching a web document by Paul Lutus. The term was Dynamic Link Library (DLL). This term seemed to provide a link to the error message that was occurring in Internet Explorer.

End-users at Patrick Henry Community College have experienced an error message in Internet Explorer when they try to launch this program. Listed below is the problem statement of the study, which will try to solve the error message in Internet Explorer.

### **STATEMENT OF THE PROBLEM**

The problem of this study was to determine why Internet Explorer reports an error message when launched by students of Patrick Henry Community College at Martinsville, Virginia.

### **RESEARCH QUESTIONS**

To guide this research, the following questions were developed:

1. What was causing an error message to appear in Internet Explorer at the remote sites of Patrick Henry Community College?
2. What can be done to solve the Internet Explorer problem at Patrick Henry Community College?

### **BACKGROUND AND SIGNIFICANCE**

The background of this study is that an error message occurs without warning when students use Internet Explorer browsing software to access the Internet. The error message occurred on random computers approximately every two weeks. It has caused students and faculty to complain about not being able to access the Internet to perform daily tasks. As a result of this problem, the college has begun to research ways of solving this problem.

The significance of this problem was that without Internet Explorer working properly, the students could not complete their assignments in a timely manner. The problem happens without warning about every two week, and the Internet Explorer software must be reinstalled before the students could use the Internet to complete their assignments. This problem has not just happened at Patrick Henry Community College, but it has occurred on a national scale. Many people were searching for a solution to this problem. At Patrick Henry Community College, a solution to this problem is of the highest priority possible to maintain the academic standards required by the college. If a solution cannot be found for this problem, then, the college must reprogram approximately one hundred and fifty computers at remote sites. This would be a massive task considering the number of computers at the remote sites. Reprogramming a computer is a very time consuming task. The length of time for one computer to be

reprogrammed is thirty-five to forty-five minutes. When a person multiplies the time taken to reprogram one computer, by the college's total number of computers at the remote sites, which are approximately one hundred and fifty, this is a massive undertaking to keep the college's computer labs running at peak performance.

### **LIMITATIONS**

The limiting factors encountered in this study were as follows:

1. Only the remote computer labs will be surveyed. This includes the counties of Patrick and Franklin and the City of Martinsville, Virginia.
2. The researcher's resources for finding a solution to this problem were limited to web documents and the input of students at Patrick Henry Community College.
3. This study was limited to finding a solution to the error message in Internet Explorer.

### **ASSUMPTIONS**

A basic assumption was that Internet Explorer software was conflicting with one of the other software applications presently loaded on the college's external computers. Also, it was assumed that this problem is not a computer brand name problem, because it has occurs in more than one computer brand. Furthermore, a solution would be perused to alleviate the problem of reinstalling Internet Explorer.

The only way for the researcher to know which computers were having problems was by the computers displaying the Internet Explorer error message. The other software applications loaded on the computers were Microsoft Office 2000, Microsoft FrontPage, Norton Antivirus, WinZip, Glencoe Keyboarding, Mediated Math, Learning Outlook

2000, and Student's files for IST 117 class assignments. The students were asked if there were problems with the other applications software installed on the computers.

## PROCEDURES

The researcher's procedures for data collection would include surveys of students at Patrick Henry Community College, web documents from Internet sites, and technical procedures performed by the researcher. The questions were designed to determine how often the error occurs and what applications are installed on the computers. Research data were also obtained from searching web documents and technical procedures performed by the researcher. Finally, the researcher requested the permission of the site directors and faculty to distribute surveys to further explore the error cause.

## DEFINITION OF TERMS

The following is a list of definitions that were relevant to this study.

**Dynamic Link Library (DLL)** is a library of executable functions or data that can be used by a windows application.

**Shell32.dll** is a computer code for a problem with the computer's processor interpreting program coding.

**Computer code** is a set of instructions for the computer's central processing unit to perform.

**Central processing unit (CPU)** is a chip on the motherboard of a computer that interprets instructions of computer codes to allow the communication between physical devices.

**Internet Explorer** is software to browse the Internet.

**Browser** is a set of computer coding that instructs the computer how to perform tasks.

**The Internet** is a network of computers linked together to provide users with a database of resources.

**Database** is a depository of resources to be used by people to help them accomplish tasks.

**Patch** is an upgrade or improvement to software.

### SUMMARY

In summary, Chapter I of the research study dealt with the problem of identifying the need for a solution to the Internet Explorer problem. This included an introduction, which stated that Patrick Henry Community College students were experiencing an error message when trying to launch Internet Explorer. This software was a vital link to the college web based learning courses. This problem was hindering students from completing their class assignments in a timely manner. Also, the problem statement identified the purpose of the study, which was to determine why Internet Explorer was reporting an error message when students at Patrick Henry Community College attempted to access the Internet. The researcher's objectives were to investigate the cause of the error message in Internet Explorer and try to discover a solution to the problem.

The background and significance gave the history and importance of the problem. The history of the problem was that the error message occurred without warning. It occurred on random computers approximately every two weeks, and students were complaining about the inability to access the Internet and complete their assignments.

The significance of this problem was without Internet Explorer working properly, the students could not complete their assignments on time. Also, a solution to this

problem was vital to allow the college the opportunity of offering web based learning courses. Furthermore, the limitations were that only students at the remote computer labs would be surveyed. The researcher resources for find a solution were limited to web documents and input of students and technical procedures performed by the researcher. The desired outcome was to find a solution to the error message.

One basic assumption was that the Internet Explorer software conflicted with one of the other software applications loaded on the computers. Another basic assumption was that the brand name of the computer had no affect on the error message occurring.

The procedures for researching a solution to this problem would be through surveys, web documents, and technical procedures performed by the researcher. Also, the researcher would seek the approval of Patrick Henry Community College's site directors and faculty in order to find a solution to the problem. Finally, the definition of terms gave a clarification on words with special meanings.

The success of this research will depend on how well the researcher collects, analyzes, tabulates, and processes the findings of this study. A brief description of how the data will be gathered is stated in Chapter I. The following chapters include a review of literature relating to the study, methods and procedures, the findings, and conclusions and recommendations related to this study.

## **CHAPTER II**

### **REVIEW OF LITERATURE**

Before collecting data, the researcher talked with numerous students and faculty about the Internet Explorer problem and the effect it was having on the students' ability to complete class assignments. Also, the researcher reviewed documents from Internet web sites about the Internet Explorer error message. These sites included: Deja.com and arachnoid.com. The web documents from Deja.com dealt with the shell32.dll error message, and the document from arachnoid.com gave insight on the Dynamic Link Library dilemma with Microsoft applications and operating system software.

### **INPUT FROM STUDENTS AND FACULTY**

According to the students and faculty of Patrick Henry Community College, the Internet Explorer problem was occurring without warning, and students were not able to complete their class assignments in a timely manner. The Internet Explorer problem was happening on random computers at three different campuses of Patrick Henry Community College. Also, this problem was occurring on different brand names and models of computers.

### **THE INTERNET EXPLORER ERROR MESSAGE DISCUSSED**

In a view of web documents related to the problem, the researcher downloaded WebPages from three different sites that provided input about the Internet Explorer problem. The first document was from Deja.com web site. This document provided the researcher with a description of the error message the college was experiencing with Internet Explorer. After reviewing the document of Ray Marmelstein, he had experienced the same problem the college was experiencing with Internet Explorer. He had tried to

launch Internet Explorer and received an illegal operation error message. This was the same error message the college was experiencing.

The second document was also from the Deja.com web site. This document enhanced the researcher's understanding of how to receive a detailed description of the Internet Explorer error message. By providing a detailed description of how to check the error message, the researcher would be better equipped to find a solution to the problem. A copy of the message is found in Appendix A.

### **THE DYNAMIC LINK LIBRARY PROBLEM**

The last document downloaded from arachnoid.com provided the researcher with terminology on the Internet Explorer problem. It provided a technical term to enhance the research of the Internet Explorer error message. This term is Dynamic Link Library (DLL). Dynamic Link Library (DLL) is a library of executable functions or data that can be used by a windows application. Typically, a DLL provides one or more particular functions and a program accesses the functions by creating either a static or dynamic link to the DLL. A static link remains constant during program execution, while the program as needed creates a dynamic link. DLLs can also contain just data.

A DLL can be used by several applications at the same time. Some DLLs are provided with the Windows operation system and available for any Windows application. Other DLLs are written for a particular application and are loaded with the application.

The original idea for the DLL system was that there would be a central repository of code. Here are the advantages:

1. Applications would link to this code library, thus saving greatly on duplication of effort and storage space.



2. Applications that used the DLL system would behave exactly the same as all other applications that used it.
3. If a problem arose, or a new feature was desired, it could be written once and all would benefit. In that sense, the DLL system is a weak version of the object-programming paradigm (Lutus, 2000).

In order for a DLL to operate correctly, an application should only place a DLL in the central repository if:

1. The DLL was newer or better than the ones already there.
2. The DLL was uniquely named; the DLL did not conflict with a DLL for another purpose with the same name.
3. If the DLL replaced another with the same name, then the code in the DLL would be exhaustively tested, so that on replacement, other applications could use it in the same way as its predecessor (Lutus, 2000).

According to Paul Lutus, Microsoft has broken all the rules concerning DLLs and their usages (2000). He wrote that on several occasions Microsoft has created and distributed DLL files that instantaneously broke every Windows application in the world (Lutus, 2000). He continued, by writing that regular end users will install an application that has a DLL with the same name as a “system” DLL, thus mysteriously bringing down the system until an expert can sort it out. Lutus stated that Microsoft released a service pack that updates all key system DLLs (Lutus, 2000). The problem with this service pack is that all the elements of the service pack must simultaneously be present in their most recent form or the system will crash. If the user installs an application that blindly replaces one or more of the DLLs from the service pack, the system will fail.

The reality is that Microsoft and any number of software vendors regularly risks the stability and security of the end users machine by writing DLL code as though it were normal programming. The correct way to write DLL is to imagine the effect of your changes and additions on every computer program that uses it.

This web document by Paul Lutus is a key ingredient to the researcher's search for a solution to the error message occurring in Internet Explorer. This document deals with DLLs, and DLLs were an important area of concern for the researcher.

### **SUMMARY**

In summary, Chapter II of this study dealt with a review of literature relating to the Internet Explorer problem. Only a brief description of each factor was presented in this section of the research study. In the following chapter, the methods and procedures used to gather data for the study will be explained. The success of the research will depend on how well the students express their needs for a solution to the problem, the results of findings from the web documents, and implementation of the findings.

## **CHAPTER III**

### **METHODS AND PROCEDURES**

The purpose of this Chapter is to explain the procedures used to design and administer the survey instruments used in this study. Topics addressed in Chapter III are population, instrument design, data collection procedures and statistical analysis.

#### **POPULATION**

The population of this study consisted of students from Patrick Henry Community College, Martinsville, Virginia. This included the counties of Franklin, Patrick, and the City of Martinsville. The size of the population was 90 students. This population was divided as following: 40 students in Patrick County, 30 students in the City of Martinsville, and 20 students in Frank County. This made the total of students 90 at all three locations.

#### **INSTRUMENT DESIGN**

The instrument used in this study was based on the research questions outlined in Chapter I of this study. The contents of this instrument are questions in the form of close and open-ended questions. These questions will prompt the users for information considering the occurrence of the Internet Explorer error message. By gathering this information, the researcher will be able to identify the machines with the problem and troubleshoot the cause of the problem. A copy of the instrument is found in Appendix B.

#### **METHODS OF DATA COLLECTION**

One method of data collection was a questionnaire instrument that the researcher distributed to students. The questionnaire instrument prompted computer end-users about the error message experienced in Internet Explorer. The students involved in this research

were from Patrick Henry Community College. The locations involved were Patrick County, Franklin County, and the City of Martinsville, Virginia. Upon approval of the questionnaire, the researcher started collecting information. The researcher contacted the site directors and faculty of Patrick Henry Community College and requested their permission to survey students. After receiving the permission to distribute questionnaires, the researcher will send a cover letter on April 12, 2001, to Cindy Griffith, Marie Thomasson, Francie Cumby, site directors, faculty, and students. Then, the researcher plans on conducting the survey on April 19, 2001. After that, a follow-up letter will be sent out on April 28, 2001, to Cindy Griffith, Marie Thomasson, Francie Cumby, site directors, faculty, and students. A copy of these cover letters is found in Appendix C. In addition, a copy of these follow-up letters is found in Appendix D.

In addition, the researcher used a second method of data collection through the search of Internet Web Documents. This method consisted of browsing the Internet and searching for documents dealing with the error message experienced by computer end-user at Patrick Community College. The researcher found three documents that were very beneficial in seeking a solution to the error message. The document by Paul Lutus dealt with Dynamic Linking Libraries, which helped the researcher narrow, the cause of the error message to a software conflict. The other two documents by Roy Marmelsten and Steve Rizkalla provided the researcher with a possible solution to the error message through a patch, which is an upgrade to software.

The final method of data collection used by the researcher was technical procedures performed on designated computers. The researcher attempted to insolate the problem by installing different software on designated computers and performing day-to-

day operation on the computers to record the affect the software would have the designated computers.

### **STATISTICAL ANALYSIS**

After the data were collected, each question on the instrument was analyzed separately. The analysis consisted of reporting responses in number and percentiles for each question. The analysis consisted of the similarity of the responses with each question.

### **SUMMARY**

Chapter III dealt with the methods and procedures used to conduct this study. The selection of the population was outlined. The population was students from Patrick Henry Community College. The population consisted of students from Franklin County, Patrick County, and the City of Martinsville, Virginia. The instrument design was addressed. The instrument was designed based on questions of exploring the Internet Explorer error message and finding a solution to the problem. Finally, data collection and statistical analysis were discussed. The data were collected using a questionnaire based on the objectives of the study. The statistical analysis consisted of analyzing each question on the questionnaire. Chapter IV will report the findings of this study.

## CHAPTER IV

### FINDINGS

This chapter shows the representation of the statistics collected from the questions used in the figures. These statistics have been analyzed and are illustrated by tables and graphs. The summary presents the answers to the survey questions. The purpose of this study was 1) to determine what was causing the error message in Internet Explorer at Patrick Henry Community College's remote sites of Patrick County, Franklin County, and the City of Martinsville; and 2) What could be done to solve the Internet Explorer problem at Patrick Henry Community College.

### SURVEY QUESTIONS

Each survey question is discussed in this section. The most significant items were noted and the figures were referenced. The number of Patrick Henry Community College's students surveyed was eighty-four, which is ninety-three percent of all the students attending college at the remote sites. Table 1 represents the number of students surveyed from each site.

**TABLE 1**

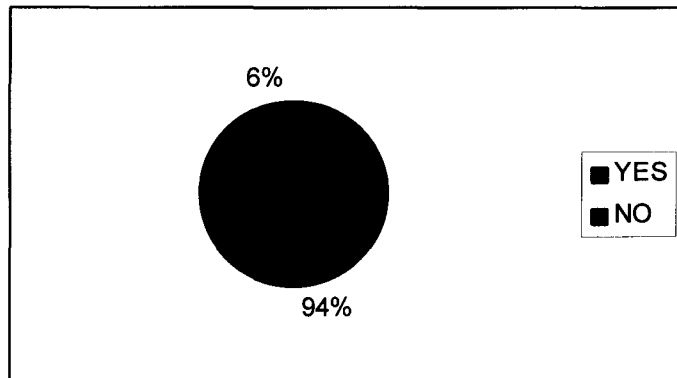
	<b>Patrick County</b>	<b>Franklin County</b>	<b>City of Martinsville</b>	<b>Totals</b>
<b>Total</b>	<b>40</b>	<b>20</b>	<b>30</b>	<b>90</b>
<b>Surveyed</b>	<b>37</b>	<b>19</b>	<b>28</b>	<b>84</b>
<b>Percentage</b>	<b>92 %</b>	<b>95 %</b>	<b>93 %</b>	<b>93 %</b>

**Patrick Henry Community College's students surveyed**

**Question 1: Do you use Internet Explorer?**

Ninety-four percent of the students interviewed said that they used Internet Explorer. Six percent of the students said that they did not use Internet Explorer. Figure 1 indicates the overall response. Table 2 shows the individual response to the question.

FIGURE 1.



**Students that used Internet Explorer**

TABLE 2

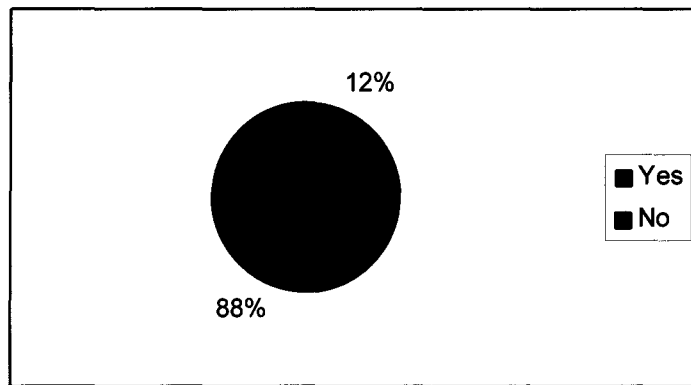
	Patrick County	Franklin County	City of Martinsville	Totals	%
YES	37	18	24	79	94 %
NO	0	1	4	5	6 %

**Students that used Internet Explorer**

**Question 2: Do you receive an error shell32.dd when trying to use Internet Explorer?**

Twelve percent of these individuals stated that they received the Internet Explorer error message shell32.dll. Eighty-eight percent said that they did not receive an error message when trying to launch Internet Explorer. Figure 2 indicates the overall response. Table 3 shows the individual response to the question.

FIGURE 2.



**Do the Students Receive an Internet Explorer Error Message?**

TABLE 3

	Patrick County	Franklin County	City of Martinsville	Totals	%
Yes	5	2	3	10	12 %
No	32	17	25	74	88 %

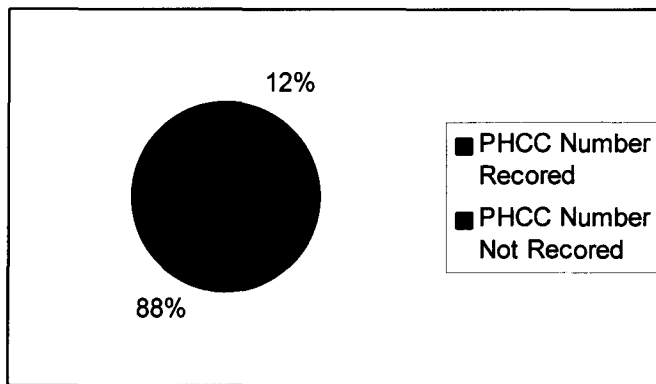
**Do the Students Receive an Internet Explorer Error Message?**



**Question 3: Please record the number on the front of the computer with the error message?**

Twelve percent of these individuals recorded the number on the front of the computers. Eighty-eight percent of the individuals did not record the number on the front of the computers. Figure 3 indicates the overall response. Table 3 shows the individual response to the question.

FIGURE 3.



**PHCC Number of the Computer with an Error Message**

TABLE 4

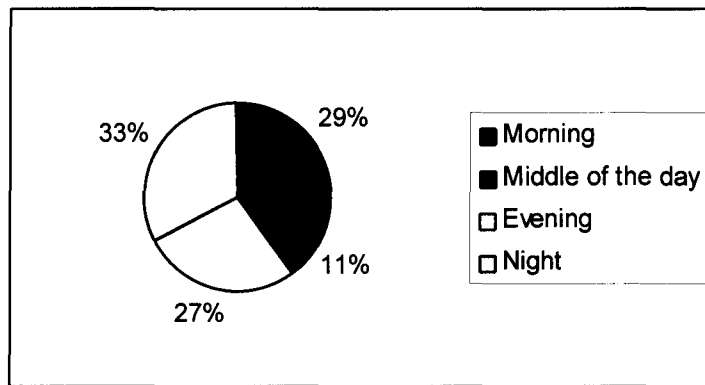
	Patrick County	Franklin County	City of Martinsville	Totals	%
<b>PHCC Number Recorded</b>	5	2	3	10	12 %
<b>No PHCC Number Recorded</b>	32	17	25	74	88 %

**PHCC Number of the Computer with an Error Message**

**Question 4: When do you use Internet Explorer?**

Twenty-nine percent of the students used Internet Explorer in the morning. Eleven percent of the students used Internet Explorer during the middle of the day. Twenty-seven percent of the students used Internet Explorer during the evening. And, thirty-three percent of the students used Internet Explorer at night. Figure 4 indicates the overall response. Table 4 shows the individual response to the question.

FIGURE 4.



**When Do Students Use Internet Explorer?**

TABLE 5

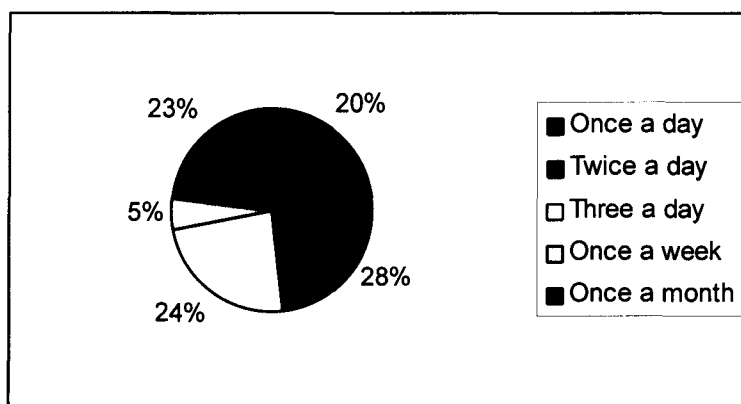
	Patrick County	Franklin County	City of Martinsville	Totals	%
<b>Morning</b>	16	11	14	41	29 %
<b>Middle of the day</b>	3	5	8	16	11 %
<b>Evening</b>	18	9	10	37	27 %
<b>Night</b>	21	11	13	45	33 %

**When Do Students Use Internet Explorer?**

### Question 5: How often do you Internet Explorer?

Twenty percent stated that they used Internet Explorer once a day. Twenty-eight percent stated that they used Internet Explorer two times a day. Twenty-four percent stated that they used Internet Explorer three times a day. Five percent stated that they used Internet Explorer once a week. And, twenty-three percent stated that they used Internet Explorer once a month. Figure 5 indicates the overall response. Table 6 shows the individual response to the question.

FIGURE 5.



How Often Do Students Use Internet Explorer?

TABLE 6

	Patrick County	Franklin County	City of Martinsville	Totals	%
Once a day	9	2	8	19	20 %
Twice a day	9	8	9	26	28 %
Three a day	10	5	7	22	24 %
Once a week	0	1	4	5	5 %
Once a month	10	2	9	21	23 %

How Often Do Students Use Internet Explorer?

**Question 6: Do you receive a shell32.dll error message when trying to use any of the following software applications?**

Zero percent of the students stated that they did not experience the error message shell32.dll when trying to use Microsoft Office 2000. Zero percent of the students stated that they did not experience the error message shell32.dll when trying to use Microsoft FrontPage. Zero percent of the students stated that they did not experience the error message shell32.dll when trying to use Glencoe Keyboarding. Zero percent of the students stated that they did not experience the error message shell32.dll when trying to use Mediated Math. Zero percent of the students stated that they did not experience the error message shell32.dll when trying to use the IST 117 Student's files. Zero percent of the students stated that they did not experience the error message shell32.dll when trying to use WinZip. Zero percent of the students stated that they did not experience the error message shell32.dll when trying to use Norton Antivirus. Zero percent of the students stated that they did not experience the error message shell32.dll when trying to use Learning Outlook 2000. The students did not receive the shell32.dll error message in any of the other applications loaded on the computers. No figure was used for question six because there was no data to be displayed. Table 7 shows the individual response to the question.

TABLE 7

	<b>Patrick County</b>	<b>Franklin County</b>	<b>City of Martinsville</b>	<b>Totals</b>	<b>%</b>
<b>Microsoft Office 2000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Microsoft FrontPage</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Glencoe Keyboarding</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Mediated Math</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>IST 177 Student's files</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>WinZip</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Norton Antivirus</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Learning Outlook 2000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Did Students Receive the Shell32dll Error in Other Applications?**

**Question 7: Please record any additional information below on the error message that occurred on the computers?**

None of the students wrote any additional information about the Internet Explorer error message. No figure was used for question seven because there was no data to be displayed. Table 8 shows the individual response to the question.

**TABLE 8**

	<b>Patrick County</b>	<b>Franklin County</b>	<b>City of Martinsville</b>	<b>Totals</b>	<b>%</b>
<b>Additional Information</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Did Students Record Any Additional Information On The Error Message?**

**SUMMARY**

This concludes the presentation of the findings from this research study. The analysis of the statistics indicated the following:

1. Ninety-four percent of Patrick Henry Community College's students at the remote site used Internet Explorer.
2. Twelve percent of the students received the error message shell32.dll.
3. Twelve percent of the students recorded the PHCC number of the computer.
4. Twenty-nine percent of the students used Internet Explorer in the morning, eleven percent in the middle of the day, twenty-seven percent in the evening, and thirty-three percent at night.

5. Twenty percent of the students used Internet Explorer once a day, twenty-eight percent twice a day; twenty-four percent three time a day, five percent once a week, and twenty-three percent once a month.
6. None of the students received the error message shell32.dll with the other applications loaded on the computers.
7. None of the students recorded any additional information on the error message.

The following chapter will provide a summary, conclusions and recommendations based upon the findings from this research.

## CHAPTER V

### SUMMARY, CONCLUSION, AND RECOMMENDATIONS

This research study dealt with the shell32.dll error message in Internet Explorer. The success of this research will depend on how well the researcher collects, analyzes, tabulates, and processes the findings of this study. The problem of this study was to determine why Internet Explorer displayed an error message when launched by students of Patrick Henry Community College's remote sites.

The research questions of this study were to determine:

1. What was causing an error message to appear in Internet Explorer at the remote sites of Patrick Henry Community College?
2. What can be done to solve the Internet Explorer problem at Patrick Henry Community College?

The background of this study was that an error message occurred without warning when students use Internet Explorer browsing software to access the Internet. The error message occurred on random computers approximately every two weeks. It has caused students and faculty to complain about not being able to access the Internet to perform daily tasks. As a result of this problem, the college has begun to research ways of solving this problem.

The significance of this problem was that without Internet Explorer working properly, the students could not complete their assignments in a timely manner. The problem happens without warning about every two week, and the Internet Explorer software must be reinstalled before the students could use the Internet to complete their assignments. This problem has not just happened at Patrick Henry Community College,



but it has occurred on a national scale. Many people were searching for a solution to this problem. At Patrick Henry Community College, a solution to this problem is of the highest priority possible to maintain the academic standards required by the college. If a solution cannot be found for this problem, then, the college must reprogram approximately one hundred and fifty computers at remote sites. This would be a massive task considering the number of computers at the remote sites. Reprogramming a computer is a very time consuming task. The length of time for one computer to be reprogrammed is thirty-five to forty-five minutes. When a person multiplies the time taken to reprogram one computer, by the college's total number of computers at the remote sites, which are approximately one hundred and fifty, this is a massive undertaking to keep the college's computer labs running at peak performance.

The limiting factors encountered in this study were as follows:

1. Only the remote computer labs will be surveyed. This included the counties of Patrick and Franklin and the City of Martinsville, Virginia.
2. The researcher's resources for finding a solution to this problem were limited to web documents, the input of students at Patrick Henry Community College, and technical procedures performed by the researcher.
3. This study was limited to finding a solution to the error message in Internet Explorer.

A basic assumption was that Internet Explorer software was conflicting with one of the other software applications presently loaded on the college's external computers. Also, it was assumed that this problem was not a computer brand name problem, because it has

occurs on more than one computer brand. Furthermore, a solution was perused to alleviate the problem of reinstalling Internet Explorer.

The only way for the researcher to know which computers the problem occurred on was by the computers displaying the Internet Explorer error message. Other software applications loaded on the computers were Microsoft Office 2000, Microsoft FrontPage, Norton Antivirus, WinZip, Glencoe Keyboarding, Mediated Math, Learning Outlook 2000, and Student's files for IST 117 class assignments. The students were surveyed about the error message occurring in these other applications installed on the computers.

The researcher's procedures for data collection were students' surveys, web documents, and technical procedures performed by the researcher. The survey questions were designed to determine how often the error occurred, on which computers the error message occurred, and did the error message occur in the other applications installed on the computers. The web documents helped the researcher discover that the Windows Operating System installs new Dynamic Link Library (DLL) files when new software is installed on a computer. By Windows installing new (DLL) files, this could cause a problem with the software already installed on the computer. The technical procedures performed by the researcher indicated the problem was with the software and not hardware. Finally, the researcher requested the permission of Patrick Henry Community College, the site directors, faculty, and students to distribute surveys to collect data about the problem.

## **CONCLUSION**

The researcher chose two research questions at the beginning of this study. The first was to determine what was causing an error message in Internet Explorer. The second was to find a solution to the Internet Explorer problem.

The following are conclusions based on the research questions, and data obtained through the students' survey.

1. Internet Explorer error message occurring on the computers.

The Internet Explorer error message is causing students to experience delays in completing class assignments. According to the surveys, students were experiencing the Internet Explorer error message on twelve percent of the computers. Ninety-four percent of the students used Internet Explorer.

2. Shell32.dll error message occurring in other software applications.

According the data collected, none of the other software installed on the computers caused the shell32.dll error message. Students at all three sites recorded no occurrence of the error message while using the other applications. This helped the researcher conclude that Internet Explorer is the software causing the problem. Furthermore, the researcher installed the newest version of Internet Explorer on five computers at the college and this alleviated the problem.

## **RECOMMENDATIONS**

This study has shown that the Internet Explorer problem is causing students to experience delays in completing class assignments. Considering the data collected by the researcher through surveys, web documents, and technical procedures, the researcher proposes two recommendations.

First, it would benefit the college to install the newest version of Internet Explorer. The newest version of Internet Explorer would provide a solution to the problem experienced in the current version of this software. The initial installation of this software would be time consuming, but the college would benefit by the newest version because students could complete class assignments in a timely manner. Once the software is installed, the college's computers could operate at peak performance.

The second recommendation would be to request computer lab assistants to help with the installation of the newest version of Internet Explorer. By allowing the lab assistants to help with the installation, the college would be able to complete this process in approximately two days and a half. This recommendation is based on the fact that there are approximately one hundred and fifty computers, seven lab assistants, and it takes between thirty-five to forty-five minutes to install the newest version of Internet Explorer. This would expedite the solution of the problem and give students more time to complete class assignments before classes end.

## **BIBLIOGRAPHY**

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**APPENDIX A**

**INTERNET EXPLORER ERROR MESSAGE**

!explore



OK

Details

!EXPLORE caused an invalid page fault in  
module SHELL32.DLL at 0187:7fcb1946.

Registers:

EAX=00008997 CS=0187 EIP=7fcb1946 EFLAGS=00010216

EBX=00000000 SS=018f ESP=00588ff0 EBP=00589024

ECX=000035f9 DS=018f ESI=00427670 FS=2f5f

EDX=00430005 ES=018f EDI=7fcb22ee CS=2b7e

Bytes at CS:EIP:

66 8b 0a 66 85 c9 75 f1 c2 04 00 ff 74 24 04 ff





**APPENDIX B**

**SURVEY**

## Internet Explorer Error Message at Patrick Henry Community College

**Purpose:** This is a survey on the Internet Explorer Error Message Shell32.dll

**Directions:** Please circle the appropriate answer (s).

- Do you use Internet Explorer?

Yes      No

- Do you receive an error shell32.dll when trying to use Internet Explorer?

Yes   No

- Please record the number on the front of the computer with the error message.

**PHCC Number** \_\_\_\_\_

- When do you use Internet Explorer? **(Circle all that apply)**

In the morning                      In the middle of the day

In the evening                      At night

- How often do you use Internet Explorer?

Once a day                      Two times a day

Three times a day      Once a week

Once a month

- Do you receive a shell32.dll error message when trying to use any of the

following software applications? **(Circle all that apply)**

Microsoft Office 2000      Glencoe Keyboarding

Microsoft FrontPage      Mediated Math

Norton Antivirus              IST 117 Student's files

WinZip                      Learning Outlook 2000

- Please record any additional information below on the error message that occurred on the computers.

**APPENDIX C**  
**COVER LETTERS**

107 Parkway Drive  
Martinsville, Virginia 24112

April 12, 2001

Patrick Henry Community College  
645 Patriot Avenue  
Martinsville, Virginia

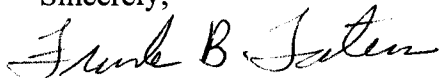
Dear Site Director:

I am interested in conducting a survey of your students at the Patrick Henry Community College remote sites at Patrick County, Franklin County, and the City of Martinsville to determine the cause of an Internet Explorer error message shell32.dll. The survey will consist of seven questions that will be beneficial in finding a solution to the problem with Internet Explorer. By finding a solution to this problem, students will be able to continue their web-based courses. Without a solution to this problem, students will not be able to complete their assignments in a timely manner.

This survey will take only about five minutes to complete. The date for the survey is April 19, 2001, at 9:00 a.m. in computer lab room 100. This information is only for finding a solution to the Internet Explorer problem. All the data collected will be held in strict confidence.

Your help is vital to finding a solution to this problem.

Sincerely,

A handwritten signature in cursive script that reads "Frank B. Tatum".

Frank B. Tatum  
Computer Technician II

107 Parkway Drive  
Martinsville, Virginia 24112

April 12, 2001

Patrick Henry Community College  
645 Patriot Avenue  
Martinsville, Virginia


Dear Faculty:

I am interested in conducting a survey of your students at the Patrick Henry Community College remote sites at Patrick County, Franklin County, and the City of Martinsville to determine the cause of an Internet Explorer error message shell32.dll. The survey will consist of seven questions that will be beneficial in finding a solution to the problem with Internet Explorer. By finding a solution to this problem, students will be able to continue their web-based courses. Without a solution to this problem, students will not be able to complete their assignments in a timely manner.

This survey will take only about five minutes to complete. The date for the survey is April 19, 2001, at 9:00 a.m. in computer lab room 100. This information is only for finding a solution to the Internet Explorer problem. All the data collected will be held in strict confidence.

Your help is vital to finding a solution to this problem.

Sincerely,



Frank B. Tatum  
Computer Technician II

107 Parkway Drive  
Martinsville, Virginia 24112

April 12, 2001

Patrick Henry Community College  
645 Patriot Avenue  
Martinsville, Virginia

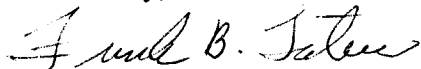
Dear Student:

I am interested in conducting a survey on the Internet Explorer error message shell32.dll. This survey will consist of seven questions that will be beneficial in finding a solution to the problem with Internet Explorer. By finding a solution to this problem, you will be able to continue your web-based courses. Without a solution to this problem, you will not be able to complete your assignments in a timely manner.

This survey will take only about five minutes to complete. The date for the survey is April 19, 2001, at 9:00 a.m. in computer lab room 100. This information is only for finding a solution to the Internet Explorer problem. All the data collected will be held in strict confidence.

Your help is vital to finding a solution to this problem.

Sincerely,



Frank B. Tatum  
Computer Technician II

**APPENDIX D**  
**FOLLOW-UP LETTERS**

107 Parkway Drive  
Martinsville, Virginia 24112

April 28, 2001

Patrick Henry Community College  
645 Patriot Avenue  
Martinsville, Virginia

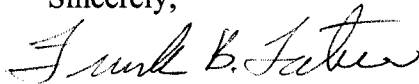
Dear Site Director:

I would like to thank you for allowing the research project on the Internet Explorer error to be conducted at your site. As you know, this research is vital to the success of web-based learning. By allowing the researcher the chance to survey the students, the college can correct any problem with this program and better serve the web-based students. In addition, this site will aid the progress and enhancement of the distance-learning program.

If you have any additional questions or comments on this research project, please contact Frank B. Tatum at (540) 656-0220. All the data collected will be held in strict confidence.

Thanks again for your help with this research project.

Sincerely,

A handwritten signature in cursive script that reads "Frank B. Tatum".

Frank B. Tatum



107 Parkway Drive  
Martinsville, Virginia 24112

April 28, 2001

Patrick Henry Community College  
645 Patriot Avenue  
Martinsville, Virginia


Dear Faculty:

I would like to thank you for allowing the research project on the Internet Explorer error to be conducted by your students. As you know, this research is vital to the success of web-based learning. By allowing the researcher the chance to survey the students, the college can correct any problem with this program and better serve the web-based students. In addition, this site will aid the progress and enchantment of the distance-learning program.

If you have any additional questions or comments on this research project, please contact Frank B. Tatum at (540) 656-0220. All the data collected will be held in strict confidence.

Thanks again for your help with this research project.

Sincerely,

A handwritten signature in cursive script that reads "Frank B. Tatum".

Frank B. Tatum  
Computer Technician II

107 Parkway Drive  
Martinsville, Virginia 24112

April 28, 2001

Patrick Henry Community College  
645 Patriot Avenue  
Martinsville, Virginia

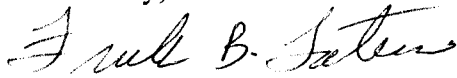
Dear Student:

I would like to thank you for completing the survey on the Internet Explorer error message. This research is vital to the success of web-based learning. By completing the survey, this will help the college in correcting any problem with this program and better serve the web-based students. In addition, you will aid the progress and enchantment of the distance-learning program.

If you have any additional questions or comments on this research project, please contact Frank B. Tatum at (540) 656-0220. All the data collected will be held in strict confidence.

Thanks again for your help with this research project.

Sincerely,

A handwritten signature in cursive script that reads "Frank B. Tatum".

Frank B. Tatum  
Computer Technician II