

A Research on the Impact of Internet Use in American Elementary School Libraries

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Abstract

The purpose of this research was to explore the impact of Internet use in American elementary school libraries' operations and to find the best way for use Internet tools in elementary school libraries' operations. This study may offer important information about the impact of Internet usage for elementary school library's operations. The research question was: Is the Internet usage having significant impact for organizational operations in the American elementary school libraries? This study employed survey research to conduct the research process. Research participants were 50 administrators in 50 elementary school libraries; Texas, U.S.A. Descriptive statistics was used to analyze the impact of Internet applied in the elementary school libraries. Results indicated that there was a significant impact of the Internet usage in American elementary school libraries' operations. The author suggests that elementary school libraries' organizational leaders need pay attention to the impact of Internet usage in their business and they also need plan how to utilize the Internet into their elementary school libraries in the future.

Keywords : Internet use; Elementary school library; Organizational operation

I. Introduction

The Internet is a treasure-trove of information for any kind of organization¹. The owners and managers also believe that understanding and using Internet and other technological tools could enhance the quality of organizational operations.

Purpose of research

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1. J. Troutner, "Learning to Surf the Internet Effectively," *Educator's Outlook*, (2000).

Research question

The research question was: Is the Internet usage having significant impact for organizational operations in the American elementary school libraries?

Significant of research

Internet is an invaluable tool in nearly every organization.² An organization that cannot utilize Internet both as productivity tool and as a marketing tool may have a tremendous disadvantage compared to its competitors. This exploratory study investigated the impact of Internet use in American elementary school libraries' operations and to find the best way for use Internet tools in elementary school libraries' operations. This study may offer important information about the impact of Internet use for elementary school libraries' operations.

Theory base

This research was based on the contingency theory, in contrast to classical organizational theory. Most theorists today believe that there is no one best way to organize. What is importance of a fit between the organization's structure, its size, its technology, and the requirements of its environment? This perspective is referred to as Fiedler's "contingency theory" in contrasts with the perspective of classical theorists like Weber, Taylor, Fayol, etc. who rely on only one way to operate organizations.

II. Literature Review

This chapter will discuss the history of the Internet and utilizing Internet in the organization. What is known as the Internet today has its roots in a network setup by the U.S. Department of Defense in the early 1970s. In that early form, it was called the Arpanet, established by the Advanced Research Projects Agency (ARPA). It connected various military and research sites, and was itself a research project in how to build reliable networks — in particular, about how to build networks that could withstand partial outages in the event of a war and still function. It was designed to require the minimum of information from the computer clients. Beginning in the late 1980s, the National Science Foundation (NSF), a federal agency, started expanding its own NSFNET, using the technology developed by Arpanet. This was done to allow campuses and research centers to use NSF's supercomputer sites. But the sharing of supercomputers also allowed the connected sites to share other things not related to the supercomputer centers. As people start-

2. Y. B. Shi, *Essentials of Business Management for Information Technology*. Unpublished doctoral dissertation, National Cheng-Chu Elementary School, Taipei, Taiwan, 1996, pp.113-124.

ed to discover the benefits of the Internet, such as e-mail, and as NSF started to promote universal educational access by funding college networks, Internet traffic and its popularity increased at an exponential level. Today, you cannot open a newspaper without finding some reference to the Internet. You cannot listen to the radio without hearing a company's web address announced as part of the advertisement. The Internet is becoming a major, multibillion-dollar, integral part of international business, and is estimated to have at least 200 million people online, as well as 14 million web sites.

The school library's library on-line could supports faculty use of computer and multimedia systems to improve teaching and learning at school. Faculty and their assistants can create instructional materials including interactive presentations, videos and web sites. Faculty can also receive help integrating technology tools into their courses such as web-based forums, list-serves and online learning management systems such as course work.³

D'Aveni believed that "to use Internet applications and resources, one must have a connection to the Internet. This may appear as an overly simplistic statement, but there are several levels of increasingly complex connectivity to be considered."⁴ This section will highlight the opinions of several researchers to describe the types of Internet connections and Taiwan's position concerning Internet connections.⁵ In the late 1960s, the Department of Defense (DOD) was confronted with the Cold War and the survivability of their bases after a possible nuclear attack. The DOD commissioned one of their agencies (the Advanced Research Projects Agency, ARPA) to create a computer network that could survive local outages but still permit communications among the nodes that survived such a catastrophe. At that time, computer manufacturers were delivering systems that implemented strictly proprietary communications protocols. So ARPA first developed a set of communications protocols that would permit many different systems to communicate. One outcome was the development of the TCP/IP (Transmission Control Protocol/Internet Protocol) suite, which was eventually implemented into every manufacturer's computer system, thus enabling any computer to talk to any other computer.

Access from the home (and to the consumer) will be a driving force for Internet technologies. Any home PC owner with a modem can connect to

3. W. Terri, "Academic Technology Lab," *Educator's Outlook*, (1997).

4. R. A. D'Aveni, *Hyper-competition: Managing the dynamics of strategic maneuvering* (New York: The Free Press, 1994), p.53.

5. J. W. Semich, "The World Wide Web: Internet boomtown," *Datamation*, 41:1(1995): 37-41;

T. L. Yang, Motif and Efficiency Study in Enterprise Combination—Take 1000 Taiwan. Unpublished master's thesis, Providence Elementary school, Taichung, Taiwan, 1995, pp.56-57; and

L. C. Mao, The Relationship between the Information Technology and Research Development. Unpublished master's thesis, National Taiwan Technology Elementary School, Taipei, 1998, pp. 107-117.

the Internet simply by subscribing to an Internet service provider. But there will be many more ways to connect, and at much higher speeds. Cable companies, long distance companies, computer companies, and local telephone companies are all bringing the Internet to homes.⁶

There will be more nationwide initiatives concerning the Internet. There are already established protocols for a national e-mail address. Several companies provide "Digital IDs" or a "certificate" which guarantees that they are who they say they are. The Vice President's call to make the Internet accessible in every school is quickly becoming a reality. Government agencies at every level, from local to Federal, are working on some aspect of the Internet, from regulation and taxation to consumers selling their own services on the Internet. There are several ways to connect to the Internet: (a) regular telephone line; (b) ISDN; (c) cable; or (d) dedicated leased lines.

Generally speaking, the Internet is an intermediary for information exchange and can store vast amounts of information. It has powerful searching capabilities and can organize and disseminate information interactively, and facilitate the transaction of information-based products. For sellers and buyers, all these functions can be achieved with a lower cost than by traditional means. The Internet can provide 1) faithful reproduction of descriptive and experiential product information, 2) greatly expanded universe of offerings relative to what can be accessed now through local or catalog shopping, 3) an efficient means of screening the offerings to find the most appealing options for more detailed consideration, and 4) unimpeded search across stores and brands and memory for past selection, which simplifies information searching and purchase decisions.⁷

The library's approach to information access is an important part of the environment where technology supports the classroom. The benefit of library technology are in the following: (a) Student researchers have ready access to extensive journal and book collections in disciplines relevant to their areas of study; (b) students study that support use of both print and electronic resources; (c) Students have 24-hour access to the library with support of the library and computing staff on evenings and weekends whenever classes are in session; (d) Students access databases from home, they find course syllabi and copies of reserve readings on the library's Web site, and they participate in Web-based course discussion groups; and (f) The library supports the use of these databases by providing students with

6. M. K. Lin, A Research on the Relationship between Information Technology and Hotel Management. Unpublished master's thesis, National Chung-Sheng Elementary School, Taipei, Taiwan, 1995.

7. P. Y. Lin, The Relationship between Internet and Business Success in Taiwan. Unpublished master's thesis, Nation Taiwan Elementary School, Taipei, Taiwan. (1997) pp. 97-98.

instruction in using those databases in their research and writing class.⁸

III. Methodology

The purpose of this research was to explore the impact of Internet use in American elementary school libraries' operations. This study employed survey research to conduct the research process and the research data measured by the *Survey of the Impact of Internet Use in the Library*.

Research design

The method employed quantitative research method in conducting this study was measure the use of Internet in various American elementary school libraries and provided an overview of the method of Internet use in elementary school libraries' operations. The goal of this study was to help elementary school libraries' owners/ managers understand how important it was to integrate Internet into their business.

A descriptive research design was utilized to response the research question. The research question was: Is the Internet usage having significant impact for organizational operations in the American elementary school libraries?

Sample and participants

The research samples were 50 elementary school libraries in Texas, U.S.A. The participants of this research were one owner/manager from each sample elementary school library.

Data collection

In this research, the author was use survey instrumentation to collect the research data. This research was focus on the Texas State area's elementary school libraries. The data collected from elementary school libraries' administrators from each sample elementary school library.

Instrumentation

The instrument for this research was a valid, reliable questionnaire. The instrument of this research employed *Survey of the Impact of Internet Use in the Library* made by author. The author states that this instrumentation could test the impact of Internet applied in the library. Coefficient Alpha measured this instrument for the reliability and experts modified this instrument for validity. The information of reliability and validity will be discussed in next section of this chapter.

The survey instrument that measured the libraries' satisfaction with the performance of Internet consisted of 30 items, designed to ask about the

8. R.L. Henderson, "Library Technology," *Educator's Outlook*,(2002).

impact of Internet use in the library. This questionnaire included six scales. The questionnaire design followed the purpose of the research and the research hypothesis to explore the possible impact between the Internet use and the organizational operation of the elementary school library.

Reliability and validity

Instrument reliability for *Survey of the Impact of Internet Use in the Library* was based on the fact that the author used Cronbach to measure the reliability of his study scale. The reliability of each scale was assessed by Coefficient Alpha Cronbach α over 0.6. Nunnally (1967) suggests that the minimum acceptable level of reliability is 0.5. Instrument validity for *Survey of the Impact of Internet Use in the Library*, according to the author, enhances the validity by enhancing face and content validity.

Data Analysis

Statistical procedures were conducted to determine the impact of Internet use in American elementary school libraries' operations. Descriptive statistics was used to analyze the impact of Internet applied in the elementary school libraries. The Statistical Package for the Social Sciences (SPSS) computer software program was used to complete the analysis of data. The results of data analysis are presented in Chapter Four and Five.

IV. Presentation and Analysis of Data

The purpose of this chapter was to present a description of the research data and to analyze the data relating to the primary research question of the study. The primary research question was: Is the Internet usage having significant impact for organizational operations in the American elementary school libraries?

The findings in this chapter contain the raw data, and the narrative results relating to the research. The results are organized and discussed in three sections: source of data, descriptive statistics, and summary.

Source of data

The research was conducted with 50 administrators in 50 American elementary school libraries. Each participant completed the *Survey of the Impact of Internet Use in the Library*.

Descriptive statistics for total sample

This section provides descriptive statistics results for total sample of impact of Internet applied in the American elementary school libraries. There were 50 elementary school library administrators who (N=50) answered these questions. The descriptive statistics was employed to test the impact of the use of Internet in the elementary school libraries.

Results indicated that American elementary school libraries administrators were agree and strongly agree for there was significant impact of Internet usage in their elementary school libraries in following:

1. Through the use of Internet, the user and reader can effective and efficient interaction from Internet services of elementary school library.
2. Through the use of Internet, online activities can reduce the cost of organizational operation in elementary school library.
3. Through the use of Internet, online service can enhance a competitive position in elementary school library.
4. Through the use of Internet, elementary school library can reduce expenses of printing.
5. Through the use of Internet, elementary school library can reduce personnel expenses.
6. Through the use of Internet, elementary school library can reduce the need for fax.
7. Through the use of Internet, elementary school library can reduce the need for telephone.
8. Through the use of Internet, the user and reader can immediately share information in the elementary school library's online service.
9. Through the use of Internet, the user and reader can immediately obtain the updated information in the elementary school library's online service.
10. Through the use of Internet, the user and reader can increase communication through using Internet in elementary school library.
11. Through the use of Internet, the user and reader can get more help for searching electronic databases in elementary school library.
12. Through the use of Internet, elementary school library known for our users' service.
13. Through the use of Internet, elementary school library constantly improving our services for our users and readers.
14. Through the use of Internet, elementary school library knows who our users and readers are.
15. Through the use of Internet, elementary school library develops services to match our users and readers' needs.
16. Through the use of Internet, elementary school library is efficient.
17. Through the use of Internet, elementary school library supports the creation of information resources for the user and reader.
18. Through the use of Internet, elementary school library supports the management of information resources for the user and reader.
19. Through the use of Internet, elementary school library supports the distribution of information resources for the user and reader.
20. Through the use of Internet, elementary school library supports the preservation of information resources for the user and reader.
21. Through the use of Internet, elementary school library can clear

explain services for user and reader.

22. Through the use of Internet, elementary school library can compare information with another library.

23. Through the use of Internet, elementary school library can provided clear online library catalogue for their readers and users.

24. Through the use of Internet, elementary school library can provided useful magazine and newspaper articles for the user and reader.

25. Through the use of Internet, elementary school library can help the user and reader locate electronic versions of full-text journals.

26. Through the use of Internet, elementary school library can promote contacts and cooperation with academic departments.

27. Through the use of Internet, elementary school library can publicized widely new library resources, particularly electronic resources.

28. Through the use of Internet, elementary school library can promoted the library's electronic resources to teaching faculty and offer training in the use of these resources.

29. Through the use of Internet, elementary school library can advocated the incorporation of Library instruction into the elementary school's courses.

30. Through the use of Internet, elementary school library can created Web-based instructional models into the elementary school's courses.

In summary, these results response the primary research question: Is the Internet usage having significant impact for organizational operations in the American elementary school libraries? Chapter Four contained the interpretation and presentation of the data in narrative and statistical form. Chapter Five contains conclusions, and recommendations.

V. Conclusions and Recommendations

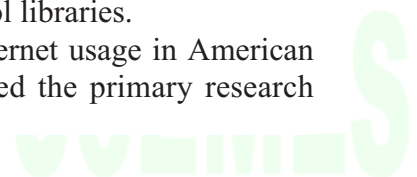
The purpose of this chapter is to present and discuss the results of the study. The chapter is divided into the following major categories: findings, conclusions, and recommendations.

Findings

The major focus of the study was to determine if there was a significant impact of the Internet usage in the elementary school library's organizational operation. Research question was examined.

Specifically, the primary research question asked that there was a significant impact of Internet usage in elementary school libraries' operations. Research participants were surveyed and tested scores to explore the impact. The descriptive statistics was conducted to explore if an impact existed for the Internet usage in the American elementary school libraries.

Therefore, there was a significant impact of Internet usage in American elementary school libraries. The finding responded the primary research



question: Is the Internet usage having significant impact for organizational operations in the American elementary school libraries?

Conclusions

The goal of this study was to help owners and managers in American elementary school libraries understand how important it is to integrate Internet into their business. The study showed the existence of a significant impact of the Internet usage in the American elementary school libraries. What are the implications of these findings? The results substantiated the existence of an impact of Internet usage in American elementary school libraries.

Overall, the study accomplished the task of establishing the impact of Internet usage in American elementary school libraries. The results of this research responded the primary research question: Is the Internet usage having significant impact for organizational operations in the American elementary school libraries?

Recommendations

The study provided a starting point for investigating the impact of the Internet usage in the elementary school libraries. While providing useful information, further research should be conducted to obtain more concise information in the use of Internet. For some of the elementary school library involved in the study, it would be interesting to investigate further with larger groups of participants, focusing on different kind of elementary school library around the world. The future research also could focus on how to improve the Internet usage in the any kinds of elementary school libraries around the world.

The impact has been established in this study. The challenge now is to assist American elementary school library plan for the use of Internet to exceed organizational goals in their elementary school libraries. However, with the following recommendations, elementary school libraries in United States can effectively utilize Internet to gain competitive advantages:

1. Determine the types of resources that the elementary school library intends to utilize and the services that the elementary school library will be providing using Internet.
2. Determine what types of Internet connection best suits the elementary school library's needs.
3. Determine what types of hardware and software are needed for use of Internet in the elementary school library.
4. Train elementary school libraries' owners, managers and employees on the proper use of Internet applications.
5. Emphasize the nature of Internet and the importance of elementary school libraries' organizational operations.

美國小學圖書館 使用網際網路影響之研究

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摘要

本研究的目的是在於探討在美國小學圖書館運作中使用網際網路對於其組織運作的影響。本研究的樣本為美國德州的50間小學圖書館。本研究是以對美國小學圖書館的管理人員進行問卷訪談，針對受訪者所屬小學圖書館的運作中使用網際網路對於其組織運作的影響進行研究。本研究以敘述性的統計方法 (Descriptive Statistic Method) 對於美國小學圖書館運作中使用網際網路的影響進行分析。研究結果指出，網際網路的使用對於美國小學圖書館的運作有顯著的的影響。最後，作者建議小學圖書館的管理者應針對其所屬小學圖書館的組織特性以及不同需求，設計並使用網際網路的技術及資源，以對所屬小學圖書館的組織運作，作出最大的貢獻及支持。

關鍵詞：使用網際網路，小學圖書館，組織運作