*(Article: 9)*

# Usability of E-resources at Calcutta University Library

**Tanmay De Sarkar[1]**

**Nimai Shit[2]**

[1]Assistant Librarian, University of Calcutta

[2]Assistant Librarian, University of Calcutta

## Abstract

*The purpose of the study is to investigate the perceived satisfaction of users towards usability of e-resources provided to them. Questionnaire based survey method was used to carry out investigation on postgraduate students, scholars and faculty members from diverse disciplines under the University of Calcutta. Questionnaires were distributed to the heads of library divisions of the respective campuses with the request to circulate the same among those who use the digital library to get access to e-books, e-journals and e-databases. Responses were received against a set of parameters, data were analysed and plausible interpretations were made. Factors affecting perceived user satisfaction have been identified. Finally, conclusion was drawn to show that users expressed their overall perceived level of satisfaction and acceptance concerning the use of electronic resources and related services being offered by the Library.*

***Keywords :*** *E-book, E-journal, Website*

## 1. Introduction:

For the last few years, libraries all over the world are experiencing a paradigm shift from physical platform to digital enclave for better management and end user satisfaction to resources. Furthermore, techniques of information retrieval received a major impetus with the advent of computer and communication technology and are being constantly upgraded with the volleys of new apps and widgets.  In the above context, libraries in India, particularly the libraries associated with institutes imparting higher education, have been focusing on digital alternatives to the physical form of documents and traditional services. Besides, the constraints, like space, manpower, and other inherent obstacles that physical documents are most commonly confronted with, the problem of duplication in collection has become a major impediment as to the funds for acquisition is concerned. Therefore, developing electronic resources and becoming a member of networking libraries has been a principal trend noticed among the higher education libraries.

## Introduction:

University of Calcutta, being the oldest University on India, set up in 1858, can trace back its history to find the origin of its Library System in 1872. Such historic Library System remains the pioneer in supporting the advancement of learning not only for this part of the country but for the greater part of India, considering the territorial jurisdiction of the University during early 20th Century. However, the Library did not remain satisfied with its past glory, and is being continuously developing in tune with the modern technological advancement and requirement of the present day users' community. The vast Library system encompasses the Central Library, two campus libraries, 49 departmental libraries and two libraries of advanced study centers. Such a huge Library System is spread over eight campuses across the city of Kolkata. It has collection of more than twelve lakh documents in print and electronic formats. Electronic documents are mostly available through UGC-INFONET digital library consortia and partly being subscribed/ purchased by our own University Fund.

## 2. Scope of the Study :

The present study is restricted to the users of the Library System of the University of Calcutta in four major campuses –

1. Central Library (CL) at Asutosh Siksha Prangan (*College Street Campus*),
2. Rashbehari Siksha Prangan Campus Journal Library (RBPCL) at Rashbehari Siksha Prangan (*Rajabazar Science College Campus*),
3. Taraknath Palit Siksha Prangan Digital Library (TPSPDL) at Taraknath Palit Siksha Prangan (*Ballygunge Science College Campus*), and
4. Alipur Campus Library (APCL) at Sahid Kshudiram Siksha Prangan (*Alipur Campus*).

CL and APCL house mostly arts and social science departments; whereas RBPCL and TPSPDL house science and technology departments.

## 3. Research Problem:

The enormous collection of documents and its management has become a challenge to us. Therefore, we need to have a feedback of users' perception on the use of electronic resources. Our users' community comprises different age groups and accommodates members from diverse disciplines. Naturally users have differential level of understanding to resources and their accessibility. Despite user orientation training that we often conduct, we still find that this vast heterogeneous community of users still requires some basic knowledge about e-resource handling for the optimum output. Hence we conducted a survey among our students, scholars and faculty members to investigate:

i)      How far the e-resources are useful?

ii)     What are the major factors affecting the use of e-resources?

## 4. Research Objective:

The Calcutta University Library System possessing collections of both print and digital documents. However, due to the funds constraints and keeping the students' information seeking habit in mind, the Library is gradually inclining more to build a comprehensive collection of electronic resources to enhance teaching-learning process of its parent institution. The present study, therefore, principally aims to receive the feedback of the users on the usability of e-resources provided to them.

## 5. Literature Review :

Research articles were published abound on electronic resource management[1,2,3,] however, a detailed and interpretive study on its effective utilization is scantily noticed, particularly with respect to higher education institute libraries in this part of the country. Massis[4] delineated the concept of the 'electronic curriculum' and investigated the role of a library in the evolving environment. He opined that in an electronic environment, 'the librarian's role still remains an essential one of supplementary instruction where teaching is paramount to the academic librarian's responsibilities'. The paper justifies the shift of library from physical to electronic environment and stressed on the potentiality of electronic resources to support teaching-learning process.

Sreekumar[5] discussed in depth about the strategies to be developed on e-resources management, trends in digital library service architecture and the role of institutional repositories. Millawithanachchi[6] conducted a case study on e-resources usage of postgraduates at the University of Colombo to investigate the Critical Success Factors (CSFs). The study identified 'technology' as the most critical factor affecting the use of e-resources, while library support, information literacy, computer competency, usefulness and user attitudes are other CSFs.

Gowda and Shivalingaiah[7] surveyed 845 researchers of humanities, social science and science disciplines in six universities in Karnataka and found that research scholars, cutting across the disciplines, prefer print resources to electronic resources. However, the degree of preference varies in different disciplines. In contrary, in a similar study, conducted on the users of Thapar University, Punjab, Kaur and Verma[8] noted the popularity of electronic journals. They found that the use of electronic resources has been increased manifold, while the use of printed journals is gradually declining. However, the study also identified potential challenges the library is facing to develop sustainable database of bibliographic as well as full-text e-journals.

**Literature Review :**

Martin[9] in his article described how the cost of acquisition can be drastically reduced with the shift from physical to electronic mode of journal acquisition. E-resource management and its usability are indeed dependent on the users' perspective, how they view those resources, which enhance their use. Accordingly, Xu[10] stressed on usage statistics for developing electronic resource assessment system. On the other hand, authors like Medeiros[11], Dadzie[12] explained challenges and opportunities in managing usage statistics of electronic resource.

In a different context, but in similar field, Chisman et. al., [13] discussed the problems of organizing information related to electronic library management. They observed that documents related to licenses, contracts, payment information, and access rights are most often than not recorded in different formats and stored in different departments making it difficult to access on time. They described the effort of Washington State University Libraries to implement "an Electronic Resource Management (ERM) system to better manage this information and to better administer their electronic resources".

Although we often spoke about electronic resource management, but in many instances there is a lack of clear cut policy on e-resource collection and its development. Pozzebon[2] pointed out that although the library professionals are well aware of the benefit of introducing the electronic resources to libraries, there is still further need of research on "how collection development policies should guide electronic resource management".

Ahmed[14] developed an online questionnaire to assess the extent of use of electronic resources subscribed by universities and the satisfaction level of the faculty members in Bangladesh. Statistically he tested to conclude that faculty members are not generally satisfied with the current level of university subscribed e-resources.

However, the constraints they identified are mainly related to poor IT infrastructure which in turn affects optimum usage of e-resources. Ahmed undoubtedly attempted to find the usability of resources but the study mainly concentrated on the faculty members of only eight universities of Bangladesh. The study cannot be generalized as it did not include the student population and most importantly the scholars. Therefore the present investigation was carried out to include teachers, scholars and students alike from the library of an oldest university in India.

## 6. Research Methodology :

Questionnaire based survey method was used to carry out investigation on postgraduate students, scholars and faculty members from diverse disciplines under the University of Calcutta. Researchers developed the questionnaire after thorough searching of relevant literature. Questionnaires were distributed to the heads of library divisions of the respective campuses with the request to circulate the same among the teachers, students and scholars, particularly to those who use the digital library to get access to electronic resources – e-books, e-journals and e-databases. Respondents were given the instruction to fill up the questionnaires, if needed more than one options under a single statement may be chosen, and return those before leaving the respective digital library. Therefore, we received hundred percent responses from the respondents.  Altogether 120 Nos of questionnaires were distributed among the campuses, with each of the four campuses received 30 questionnaires each. The filled-in questionnaires have been analyzed with the help of Excel spreadsheet to investigate how far the e-resources are helpful to our target audience.

## 7. Analysis and Interpretations :

Analysis of the data revealed that users, cutting across gender, category and disciplines use electronic resources. The interpretations under each table explain this individually.

**Table 1 : Background information**

| | Category | | | | Gender | |
| --- | --- | --- | --- | --- | --- | --- |
| | Student | Teacher | Scholar | Others | Male | Female |
| **CL** | 17 | 2 | 10 | 1 | 23 | 7 |
| **RBPCL** | 21 | 1 | 8 | 0 | 19 | 11 |
| **TPSPDL** | 18 | 5 | 7 | 0 | 12 | 18 |
| **APCL** | 25 | 0 | 4 | 1 | 8 | 22 |

Table 1 shows number of different category of users surveyed for the purpose, as well as gender-wise number of respondents from different campuses investigated. It is found that mostly the students' community uses the electronic resources, followed by scholars and teachers, which commensurate with the number of users belonging to each category. The study also finds that there is no major distinction of use of e-resources across the gender.

**Analysis and Interpretations :**

*Table 2: . Frequency of use of electronic resource*

|  | <3hrs/week | 4-6hrs/week | 7-12hrs/week | >12hrs/week |
|---|---|---|---|---|
| **CL** | 15 | 8 | 3 | 4 |
| **RBPCL** | 12 | 7 | 5 | 6 |
| **TPSPDL** | 10 | 8 | 7 | 5 |
| **APCL** | 9 | 13 | 5 | 3 |

The above table highlights the perceived tendency among the users to depend on information accessible through electronic medium.

*Table 3: Preferred electronic resource*

|  | E-Journals | E-Book | E-Reference Books | E-Databases |
|---|---|---|---|---|
| **CL** | 12 | 7 | 3 | 8 |
| **RBPCL** | 14 | 9 | 2 | 5 |
| **TPSPDL** | 17 | 7 | 3 | 3 |
| **APCL** | 11 | 9 | 4 | 6 |

Users opined that E-journals are mostly preferred to e-books and the use of abstracting databases is comparatively low. It perhaps indicates that users in general, restrict themselves in full-text information.

*Table 4 : Usefulness of electronic resource*

|  | < 20% | 20-40% | 40-60% | 60-80% | >80% |
|---|---|---|---|---|---|
| **CL** | 2 | 2 | 9 | 12 | 5 |
| **RBPCL** | 1 | 5 | 10 | 9 | 5 |
| **TPSPDL** | 2 | 4 | 4 | 14 | 6 |
| **APCL** | 1 | 1 | 13 | 10 | 5 |

Regarding the usefulness of resources, the response is rather fragmented; however, in general users remarked that electronic resources are highly useful to them.

Analysis and Interpretations :

### Table 5 : Problems in accessing electronic resource

| | CL | RBPCL | TPSPDL | APCL |
|---|---|---|---|---|
| a) I am not sufficiently familiar with electronic resources | 1 | 2 | 2 | 1 |
| b) I cannot find the electronic resources I need | 2 | 0 | 2 | 4 |
| c) I have some doubts about the permanence of the material | 1 | 1 | 2 | 0 |
| d) The material I need is not in use or is not available | 3 | 0 | 0 | 8 |
| e) It is difficult to read from the screen | 2 | 1 | 5 | 3 |
| f) E-resources are available only in University campuses | 22 | 19 | 25 | 14 |
| g) I find it difficult to get a soft copy or print out of the material for future use | 2 | 4 | 1 | 3 |
| h) Technical problems related to searching, downloading, etc. | 2 | 2 | 4 | 1 |
| i) Infrastructural problems related to space, sitting arrangements, number of terminals, etc. | 0 | 4 | 0 | 1 |
| j) Low speed of internet | 3 | 3 | 5 | 1 |
| k) Searching instruction is complicated | 1 | 2 | 0 | 0 |
| l) The use of electronic resources does not present any particular problems | 4 | 3 | 4 | 1 |

Majority of users stressed on non-availability of resources beyond the campus. In a study by Ashcroft[15] among the academic and public libraries also emphasized that attractive features like 24/7 availability and remote access provide the opportunity to increase library usage. As the resources, at present, were restricted to campuses and are available through campus IP, users are not getting access outside the campus. However, remote access apart, users are fairly satisfied with other system quality features involving e-resource accessibility like internet speed, searching, downloading, etc.

### Table 6 : Mode of acquaintance with the electronic resource

| | | CL | RBPCL | TPSPDL | APCL |
|---|---|---|---|---|---|
| a) | Library notice/ email | 3 | 3 | 7 | 6 |
| b) | Office-circular | 0 | 1 | 2 | 1 |
| c) | Library bulletin/ newsletter | 2 | 2 | 0 | 0 |
| d) | Library website | 9 | 11 | 8 | 11 |
| e) | Social media | 0 | 0 | 0 | 0 |
| f) | Personally from library staff | 7 | 1 | 5 | 5 |
| g) | Library training sessions | 0 | 0 | 0 | 1 |
| h) | From friends/ colleagues, etc. | 11 | 12 | 10 | 6 |

Interestingly, the peer groups and the library website serve as potential source of information to create awareness about the existence of electronic resources. This indicates the role of perceived usefulness of the website and positive experience of peer-group in motivating behavioural intention of others to use e-resources effectively.

**Analysis and Interpretations :**

### Table 7 : Requirement of training, etc., in relation to use of electronic resource

|   |   | CL | RBPCL | TPSPDL | APCL |
|---|---|----|-------|--------|------|
| a) | **Presentation of different resources** | 1 | 7 | 5 | 5 |
| b) | **Information-retrieval training** | 4 | 0 | 3 | 5 |
| c) | **Information about content** | 4 | 2 | 7 | 8 |
| d) | **Information technology training** | 9 | 3 | 9 | 5 |
| e) | **I do not need any training** | 12 | 18 | 6 | 7 |

Majority of the users responded that they do not require any formal training, which clearly indicates that user orientation that we provide is fairly satisfactory. Though some of them felt information technology training is essential for them, but it does not come under the library's purview to impart IT training. Almost all of our full-text resources as well as bibliographic databases have RSS (Really Simple Syndication) based TOC (Table of Content) services destined for the target audiences.

### Table 8 : Purpose of use of the electronic resource

|   |   | CL | RBPCL | TPSPDL | APCL |
|---|---|----|-------|--------|------|
| a) | **For study** | 22 | 13 | 19 | 13 |
| b) | **For project work** | 6 | 10 | 4 | 5 |
| c) | **For research work** | 15 | 12 | 9 | 20 |
| d) | **For teaching** | 2 | 1 | 5 | 0 |
| e) | **For hobbies/interests** | 5 | 6 | 8 | 1 |
| f) | **Others** | 2 | 3 | 2 | 0 |

As expected, users held that the preparation for course-work and pursuing research is the major purposes of consulting the electronic resource. This indicates the perceived effectiveness of the e-resources to enhance teaching-learning process.

### Table 9 : E-resource accessibility through online Apps

|   |   | CL | RBPCL | TPSPDL | APCL |
|---|---|----|-------|--------|------|
| a) | **Online Inter Library Loan (ILL)** | 8 | 7 | 5 | 0 |
| b) | **RSS feed** | 12 | 21 | 16 | 19 |
| c) | **Alert services** | 17 | 15 | 12 | 12 |

Users utilize inter library loan service for accessing documents not available in our library. However use of RSS and various Alert services are mostly preferred to get intimation about new addition to contents. This indicates users' perceived intention to use online Apps to get access to desired information.

**Analysis and Interpretations :**

### Table 10 : *Web-based e-resource handling experience*

|  | Experience in the use of internet | Experience with e-resources |
|---|---|---|
| CL | 25 | 19 |
| RBPCL | 30 | 26 |
| TPSPDL | 28 | 14 |
| APCL | 26 | 17 |

The above table infers that users are highly experienced in the use of internet and are fairly well experienced in handling e-resources. User orientation training, guidelines and instructions, user friendly interfaces and digital library environment, as a whole, might have enhanced the self-efficacy of users in handling the e-resources.

### Table 11 : *Usefulness of e-resources available at institutional repository*

|  | Contents are useful | Contents are informative |
|---|---|---|
| CL | 11 | 19 |
| RBPCL | 12 | 18 |
| TPSPDL | 14 | 16 |
| APCL | 10 | 20 |

Institutional repository is not meant for general users. Only selected researchers and teachers who work with the documents in institutional repository are interested in its contents and services. This indicates the behavioural intention of users to seek specific information through various e-gateways to gain online information gathering experience.

### Table 12 : *User perception on requirement of additional databases other than what the Library provides*

|  | Yes | No |
|---|---|---|
| CL | 5 | 25 |
| RBPCL | 10 | 20 |
| TPSPDL | 9 | 21 |
| APCL | 4 | 26 |

The above table clearly indicates that majority of users are satisfied with the resources that we provide and opined that they do not require any additional databases than what we usually provide to them. This also indicates their perceived satisfaction on e-resource contents.

**Analysis and Interpretations :**

**Table 13 :** *User perception on features for user friendliness of e-resources*

|   |   | CL | RBPCL | TPSPDL | APCL |
|---|---|---|---|---|---|
| a) | Less time in searching | 7 | 8 | 11 | 5 |
| b) | Availability of the e-resources is much than the print copy | 10 | 6 | 12 | 15 |
| c) | Simultaneous accessibility | 4 | 12 | 3 | 3 |
| d) | Easy accessibility | 12 | 14 | 16 | 10 |
| e) | Full-text downloading facility | 7 | 5 | 16 | 16 |
| f) | Archival facility | 2 | 1 | 2 | 4 |

Users rated easy accessibility and full-text downloading facility as major important areas that define user-friendliness of the e-resources. Our library system is adhered to high speed internet connection of 1Gbps leased line. Supported by well-equipped computers and printing facility, our digital libraries provide an excellence learning atmosphere. This suggests users' perceived satisfaction with the functional features of software and hardware facilitating access to e-resource.

**Table 14 :** *Preference  of OPAC to card catalogue*

|   | OPAC | Card Catalogue |
|---|---|---|
| CL | 18 | 12 |
| RBPCL | 17 | 13 |
| TPSPDL | 10 | 20 |
| APCL | 23 | 7 |

The higher rate of OPAC use clearly indicates that there is a major decline in the use of catalogue of printed book materials by a section of the library users who prefer electronic materials to physical copies. Our findings corroborate the opinion of Zimmerman[16] that electronic resources serve researchers well as they provide easy computerized access to materials. However, some of the users still suggest that our OPAC needs to include all electronic resources that we offer. Perhaps a comprehensive online catalogue integrating the bibliographic details of physical materials as well as electronic materials will optimize the use of OPAC.Majority of the users access electronic resources almost every day in a week, which is suggestive of their perceived satisfaction towards the services of digital library.

**Analysis and Interpretations :**

At times licensing issues do affect the use of e-journals and e-books in academic libraries[17] and the number of e-books users can access at the same time depends on what that academic library can afford[15]. Based on the above study including the suggestions from students, four major factors were identified which have direct influence on perceived user satisfaction on the effective use of e-resources; those are e-resource system quality, e-content quality, licensing issues and capability of users to handle e-resources. In a similar study but on different context by Liaw[18] found that user satisfaction directly influences users' behavioural intention to effectively use learning resources.

Taking a cue from that study[18] our present research may infer that the four factors have perceptible impact on usefulness of e-resources which have been diagrammatically represented below:
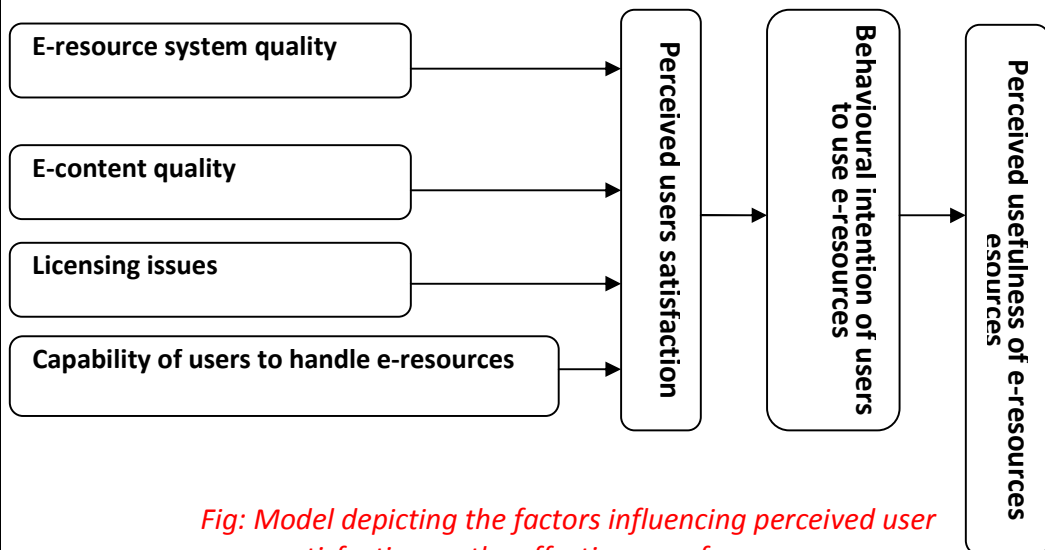


*Fig: Model depicting the factors influencing perceived user satisfaction on the effective use of e-resources*

**8. Conclusion :**

The above study is somewhat conclusive of projecting the perceived user satisfaction on the usability to electronic resources being provided to them. The analyses followed by interpretations delve into every individual facet where investigation was carried out. Users mostly prefer online databases to catalogue of printed books. It reflects the perceived users' preference to electronic documents to their print counterparts. The level of infrastructural facility and technological support the Library extends to the users has been instrumental to grow their willingness to use e-resources and consequently develop perceived satisfaction and increase level of acceptance to the online services provided by the library.

## Conclusion :

Additionally, the University website also plays a major role in generating user awareness towards e-resources. The only area of constraints that do affect perceived further use of e-resources is perhaps the IP based accessibility to e-resources limited to campuses only. The study is restricted to a handful of users under the University of Calcutta, however, it can be extended to include users of other universities and further research may be undertaken to get a comparative structure on perceived usefulness of e-resources on a vast geographical region. The result of the study may be generalized to other institution of similar background and infrastructure.

## References :

1.  Dubnjakovic, A. Electronic resource expenditure and the decline in Reference transaction statistics in academic libraries. *The Journal of Academic Librarianship*, 2012, 38(2), 94-100.
2.  Pozzebon, S.M.M.E. Use of collection development policies in electronic resource management. *Collection Building*, 2012, 31(3), 108-114.
3.  Cukadar, S., Tuglu, A. & Gurdal, G. New electronic resources management system for the ANKOS Consortium. *The Journal of Academic Librarianship*, 2013, 39(6), 589-595.
4.  Massis, B. The bookless curriculum and the academic library. *New Library World*, 2013, 114(9/10), 443-446.
5.  Sreekumar, M.G. Strategies on e-resources management for smart information systems. *Annals of Library and Information Studies*, 2012, 59(3), 155-169.
6.  Millawithanachchi, U.S. Electronic resources usage by postgraduates at the University of Colombo: Identifying the critical success factors. *Annals of Library and Information Studies*, 2012, 59(1), 53-63.
7.  Gowda, V. & Shivalingaiah, D. Attitude of research scholars towards usage of electronic information resources: a survey of university libraries in Karnataka. *Annals of Library and Information Studies*, 2009, 56(3), 184-191.
8.  Kaur, B. & Verma, R. Use of electronic information resources: a case study of Thapar University. *DESIDOC Journal of Library & Information Technology*, 2009, 29 (2), 67-73.
9.  Martin, C. Building an Electronic Resource Collection: A Practical Guide. *Library Review*, 2005, 54(6), 386-387.
10. Xu, Fei. Implementation of an electronic resource assessment system in an academic library. *Program*, 2010, 44(4), 374-392.
11. Medeiros, N. Electronic resource usage statistics: the challenge and the promise. *OCLC Systems & Services: International digital library perspectives*, 2005, 21 (3), 145-147.
12. Dadzie, P.S. Electronic resources: access and usage at Ashesi University College. *Campus-Wide Information Systems*, 2005, 22(5), 290-297.
13. Chisman, J., Matthews G. and Brady C. Electronic resource management. *The Serials Librarian*, 2007, 52(3-4), 297-303.
14. Ahmed, Z.S.M. Use of electronic resources by the faculty members in diverse public universities in Bangladesh. *The Electronic Library*, 2013, 31(3), 290-312.
15. Ashcroft, L. Ebooks in libraries: an overview of the current situation. *Library Management*, 2011, 32(6/7), 398 – 407.
16. Zimerman, Martin. Periodicals: print or electronic. *New Library World*, 2010, 111(9/10), 426 – 433.
17. Ashcroft, L. The marketing and management of electronic journals in academic libraries: a need for change. *In* Education and research for marketing and quality management in libraries, edited by R. Savard, K.G. Saur Verlag, Munich, 2002. Pp. 173-189.
18. Liaw, S-S. Investigating students' perceived satisfaction, behavioral intention, and effectiveness of e-learning: A case study of the Blackboard system. *Computers & Education*, 2008, 51, 864–873.