Developing Digital Libraries for Global Children Community with Special Reference to ICDL: Analysis and Evaluation

Sibsankar Jana   Subarna K Das

Abstract

Books can play an important role in children's lives. Research has shown that children's use of books can increase their cognitive, social, and motivational development. In addition, access to narratives from different cultures can offer children opportunities to better understand the world around them as well as who they are in relation to that world. Every day the news media report misunderstandings, intolerance and outright aggression between people from different cultures. Age-old disputes over land, water, religious and cultural practices fuel intolerance. Children absorb the culture and attitudes of their community. Consequently, cycles of intolerance pass from generation to generation. But there is some hope for change: research has shown that sharing personal experiences can change attitudes. Change can happen when children read children's books from other cultures. International Children's Digital Library Foundation is the mother organization of the International Children's Digital Library (ICDL). The mission of the International Children's Digital Library Foundation is to prepare children for life in an ethnically and culturally diverse world by building the world's largest online multicultural repository of children's literature. Present paper attempt to highlights the analysis and evaluation of above mentioned digital library .

Keywords: Children, Digital Libraries, ICDL, Service, Global Community

1.   Introduction

The ICDL was initially created by an interdisciplinary research team at the University of Maryland in cooperation with the Internet Archive. Members of the team include computer scientists, librarians, educational technologists, classroom teachers, graphic designers, and graduate students from the University of Maryland's (UMD) College of Information Studies (CLIS) and the UMD Human-Computer Interaction Lab (HCIL), a leader in children's interface design. The mission of the International Children's Digital Library Foundation (ICDL Foundation) is to support the world's children in becoming effective members of the global community - who exhibit tolerance and respect for diverse cultures, languages and ideas by making the best in children's literature available online free of charge.

2.   ICDL: Foundation

♦   Collection

To create a collection of more than 10,000 books in at least 100 languages that is freely available to children, teachers, librarians, parents, and scholars throughout the world via the Internet. The materials included in the collection reflect similarities and differences in cultures, societies, interests, lifestyles, and priorities of peoples around the world. The collection's focus is on identifying materials

that help children to understand the world around them and the global society in which they live.

♦ **Education**

To develop a greater understanding of the relationship between children's access to a digital collection of multicultural materials and children's attitudes toward books, libraries, reading, technology, and other countries and their cultures.

♦ **Technology**

To collaborate with children as design partners in the development of computer interface technologies that support children in searching, browsing, reading, and sharing books in electronic form.

♦ **Business**

To provide a platform for operational excellence that insures the Library grows in strict accordance with it strategic priorities and in a manner that leverages its outstanding human and intellectual resources to achieve the Library's mission of reaching as many children as possible with the best of children's literature.

3. Context of Evaluation

Digital libraries are complex social, institutional and technical systems. No evaluation can possibly address all of these aspects together. Thus, different approaches have been used for different evaluation goals. Context includes selection of a goal, framework, viewpoint or level(s), basic approach or perspective of evaluation. There are different types of approaches of digital library evaluation on the basis of different aspects. No single approach can exhaustively evaluate the all aspects of any digital library. Here we try to incorporate most of the approaches as possible. The approaches are:

a. System-centered approach: most prevalent. Involves study of some aspect of performance. Includes assessing effectiveness and/or efficiency of some feature or some specific design or some technological component. Applied in a number of studies with results that may inform specific choices in design or operations.

b. Human-centered approach: also widely applied. Involves study of behavior in respect to given information needs, such as information seeking, browsing, searching including performance appraisal of given tasks, either predetermined or observed in natural settings. Used in a number of studies that illuminated human behaviour, requirements, needs, or difficulties encountered. Provides implications for design, but indirectly rather than directly.

c. Usability-centered approach: Involves assessment of different features, particularly in respect to portals, by users. It is a bridge between systems- and human-centered approaches. Used in several studies with mixed, or self-evident results.

d. Ethnographic approach: Involves study of life-ways, culture and customs in a digital library environment. Also involves study of impact of a digital library on a given community. Applied successfully in a few studies, with illuminating results, particularly as to impact.

e.   Anthropological approach: Involves study of different stakeholders or communities and their cultures in relation to a given digital library. Applied in one study with interesting results illuminating barriers between stakeholder communities.

f.   Sociological approach: Involves assessment of situated action or user communities in social setting of a digital library. Applied in one study with disappointing results.

g.   Economic approach: Involves study of costs, cost benefits, economic values and impacts. Strangely, it was applied at the outset of digital library history (e.g. project PEAK) but now the approach is not really present at all.

4.   Criteria for evaluation

Criteria reflecting performance as related to selected objectives. It includes:

- ◆   What parameters of performance were concentrate on?
- ◆   What dimension or characteristic were evaluate?

Criteria refer to chosen standard(s) to judge things by. Criteria are then used to develop measures. The importance of criteria follows from this truism: there can be no evaluation without explicitly or implicitly having some criterion or criteria first .Since 1950's evaluation of IR systems uses relevance as the basic criterion for evaluation. Libraries use a variety of (more or less) standardized criteria for evaluation of components, such as a collection, or services, such as reference. Digital library efforts have not as yet developed anything similar as to evaluation criteria. A summary of most often used criteria follows.

i.   Usability

Usability has been used widely in digital library evaluation, but there is no uniform definition of what does it cover in digital library context. Usability is a very general criterion that covers a lot of ground and includes many specific criteria – it is a meta term This was pretty much the umbrella under which usability was used in digital library evaluation. Here is a list of specific usability criteria applied in various studies:

◆   **Content** (of a portal or site)

1.accessibly, availability2. clarity (as presented)3. complexity (organization, structure) 4. informativeness 5. transparency 6. understanding, effort to understand 7. adequacy 8. coverage, overlap,9. quality, accuracy10. validity, reliability11. authority

◆   **Process** – carrying out tasks such as search, navigate, browse, find, evaluate or obtain a resource etc.1. learnability to carry out 2. effort/time to carry out 3. convenience, ease of use 4. lostness (confusion) 5. support for carrying out6. completion (achievement of task) 7. interpretation difficulty8. sureness in results 9. error rate

◆ **Format**

1. attractiveness2. sustaining efforts3.consistency4. representation of labels (how well are concepts represented?)5 communicativeness of messages

◆ **Overall assessment**

1.satisfaction2. success 3. relevance, usefulness of results 4. impact, value 5.quality of experience6. barriers, irritability7 preferences 8.learning

ii.   Systems features

As digital libraries are systems, many traditional systems evaluation criteria were used. Some pertain to performance of technology others to performance of given processes or algorithms using technology.

◆ **Technology performance**
1. response time2. processing time, speed 3. capacity, load

◆ **Process/algorithm performance**
1. relevance (of obtained results)2. clustering3. similarity4. functionality5. flexibility 6.comparison with human performance7. error rate 8. optimization9. logical decisions 10. path length11. clickthroughs12. retrieval time

◆ **Overall system**
1. maintainability 2. scalability 3. interoperability4. sharability5. costs

iii.   Usage

A number of studies concentrated on use of a digital library, considering this as evaluation. Usage in itself is a criterion involving studies of:

1. usage patterns 2. use of materials 3.usage statistics 4. who uses what, when5.for what reasons/decisions

iv.   Ethnographic and other criteria

Several ethnographic and anthropological studies used criteria derived from those fields. Among others, these involve determination of conceptions and misconceptions in and between different groups, their practices and environments, their culture, their language and frames of reference, priorities, learning, impacts and similar aspects that provide comparative evaluation in a broader context of a digital library..

5.   ICDL: Evaluation Method

 The range of methods used in digital library evaluations is wide. It would be hard to find a scholarly evaluation method that was not used. It involves: What measures and measuring instruments were used? What samples were used? What procedures were used for data collection? What procedures

were used for data analysis? In the present study involves mainly limited user study and systematic study of website of ICDL with respect to Intel Pentium PCs with MS Windows (2000, XP) having 14", 17" and 19" monitors. Actually methodology includes:

◆ surveys, including direct questionnaires and online surveys
◆ structured interviews
◆ focus groups
◆ observations
◆ task accomplishment
◆ think aloud
◆ case studies
◆ transaction log analyses
◆ experimentation
◆ records analysis
◆ usage analysis
◆ documents, meeting, communication analysis (anthropology)
◆ economic analysis

6. Data collection

As the scope is very much little as per time span for evaluation and other constraints, only user survey and website study were used for data collection.

7. ICDL: Analysis and Evaluation

7.1 Authority

The ICDL was initially created by an interdisciplinary research team at the University of Maryland in cooperation with the Internet Archive. Members of the team include computer scientists, librarians, educational technologists, classroom teachers, graphic designers, and graduate students from the University of Maryland's (UMD) College of Information Studies (CLIS) and the UMD Human-Computer Interaction Lab (HCIL), a leader in children's interface design. The ICDL is now the principal activity of the independent not-for-profit ICDL Foundation, which continues to work closely with the University of Maryland by providing generous support for ICDL related research in the Human Computer Interaction Laboratory and the College of Information Studies. (The ICDL is a five year project funded primarily by the National Science Foundation (NSF) and the Institute for Museum and Library Services (IMLS) for creating a digital library of international children's books. This five-year research project, created in collaboration with the Internet Archive and conducted by the University of Maryland, has five primary goals):

◆ to create a collection of more than 10,000 books in at least 100 languages that is freely available to children, teachers, librarians, parents, and scholars throughout the world via the Internet;

◆ to collaborate with children as design partners in the development of computer interface technologies that support children in searching, browsing, reading, and sharing books in electronic form;

◆ to better understand the concepts of rights management and "fair use" in a digital age;

◆ to evaluate the impact that access to digital materials may have on collection development and programming practices in school and public libraries;

◆ to develop a greater understanding of the relationship between children's access to a digital collection of multicultural materials and children's attitudes toward books, libraries, reading, technology, and other countries and cultures.

An initial prototype of the ICDL was introduced at a celebration at the Library of Congress in Washington, DC, in November 2002. At that time, the collection consisted of 181 books, which were provided by national libraries and other government agencies, public library systems, collaborating publishers, and individual authors and illustrators. Approximately half of the titles were within copyright protection and half were freely available in the public domain. The materials selected for the prototype generally were in compliance with the selection criteria established for the collection by the National Advisory Board of Librarians; however, efforts were made to acquire and digitize as diverse a collection as possible to ensure that the functions of the ICDL interface could be effectively tested. Now International Children's Digital Library Foundation manages ICDL. From very beginning ICDL was developed and powered by well-reputed institutions. The ICDL Foundation has famous and scholar personalities in Foundation Directors and Board of Advisors.

7.2   Authenticity

The information in the website are very much authentic because the metadata regarding each item/book are explicitly stated with each and every book. Again authority and authenticity are correlated to each other.

7.3   Collection/Resources

The collection in the ICDL is comprised of different children books written in different languages. All books consisting of the scanned pages arranged serially. At the end of the initial research period, it is anticipated that the collection of the ICDL will consist of approximately 10,000 materials in at least 100 languages. Materials within the collection are made available through the Library over the Internet to all users without charge. The project does not support downloading, copying or printing of any materials in the collection. The materials selected for inclusion in the ICDL are those that:

◆ Support the understanding of similarities and differences among and within countries, peoples, and cultures;

- ◆ Promote tolerance and acceptance;
- ◆ Are considered relevant to children in today's world;
- ◆ Have a high degree of appeal for children of an age between 3 and 13;
- ◆ Meet professionally accepted quality standards in terms of content, format, and presentation; and,
- ◆ Can be presented effectively in a digital format.

It will be very much relevant and effective to analyze and evaluate the collection in the following criteria:

7.3.1 Relevance

Librarians, teachers, authors, illustrators, publishers, and children from all over the world suggest books that they think should be considered for our collection. Each book must be carefully evaluated before it can be added to the Library. In accordance with the goal of the ICDL, all information are relevant. Again as per the audience is concerned, the books included in the library are of basically children books. The metadata associated with the item are reasonable and relevant.

7.3.2 Formats

The formats of the books in the ICDL are of scanned image. The digitized formats are obtained through:

◆   Choosing books: The ultimate selection of the books to be scanned.

◆   Scanning books: Books have to be scanned and saved TIFF image format into our database in order to get the book pages into our computers. Scanners take very detailed pictures of pages and save the images in a way that the computers of ICDL can recognize. Some of the books that are scanned for the ICDL are cut up and sucked into a scanner one page at a time to be automatically scanned. Other books are scanned one page at a time without destroying the books. Some of the really old books in the collection have to be repaired before they are scanned because the scanning process could cause them to fall apart. Sometimes the people who donate books scan them for ICDL. Other times the people who work at the ICDL scan them. Sometimes ICDL pay another company to scan books for the library. The technical specification including formats, naming convention and guidelines for scanning are enumerated below:

1.   **Technical Specifications**
- ◆ **File Format**
  Uncompressed TIFF
- ◆ **Pixel depth**
  24 bit color
- ◆ **Spatial resolution**

300 dpi

♦ **Example**

caralic-0001.tif (11.5 MB)

2. **Naming Convention**

♦ Filenames should use the format **\<id\>-####.tif** where:

o **\<id\>**

7 character unique book identifier, ideally of the format aaatttt where aaa is the first three letters of the primary creator's last name and tttt is the first four characters of the book title (excluding articles such as the, a, etc.)

o *####*

4 digit scan number, padded with zeros and beginning at 1 (e.g., 0001)

♦ **Example**

Charles Lamb, The Adventures of Ulysses: lamadve-0001.tif

3. **Guidelines**

♦ Scanning of the book cover to cover, including blank pages. Scan 0001 is assumed to be the front cover. If all pages are scanned, there should be an even number of scans.

♦ All scans should represent a single page, even if an image spans multiple pages.

♦ Cropping of the scan to the edge of the page. Clear direction is given to make all scans, including the cover page, the same size and dimensions (i.e. number of pixels), or as close to the same size as possible.

♦ Scanning of pages with rotated images as they appear in the book.

♦ Provision of address for contact ICDL authority at icdl-rights@cs.umd.edu if senders have any questions.

7.3.3 Library Materials Selection

1. **Selection Criteria for the ICDL**

Materials selected for inclusion in the ICDL collection during the first five years of the project must support the research goals of the project and must be appropriate for one or both of the primary audiences identified as users of the Library. The materials in the International Children's Digital Library, which are intended primarily to be used by children, parents, teachers, and school and public librarians, should:

♦ Support the understanding of similarities and differences among and within countries, peoples, and cultures;

♦ Promote tolerance and acceptance;

♦ Contribute to children's understanding of the diversity of the global society;

- ◆ Have a high degree of appeal for children of an age between 3 and 13;
- ◆ Meet professionally accepted quality standards in terms of content, format, and presentation;
- ◆ Be considered relevant to children in today's world;
- ◆ Be appropriate for the age levels of the intended audience for the collection;
- ◆ Be presented in their entirety and not adapted or abridged from their original published form; however, works originally published as abridgements or adaptations of other works may be included in the collection; and
- ◆ Be presented effectively in a digital format.
- ◆ Expand the scope and variety of cultures represented in the collection;
- ◆ Have achieved historical significance;
- ◆ Represent exemplary artistic, historic, and literary qualities, such as award winners; or
- ◆ Contribute to the project's research priorities.

All materials contributed to the Library will be evaluated using the above criteria.

2. Acquisitions Process

Materials included in the collection may be:

- ◆ Freely available in the public domain;

- ◆ Contributed by a National Library or another national agency that holds the rights to the materials;

- ◆ Acquired by the ICDL under a contractual agreement with the creator(s) or publisher(s) of the work or with another entity that has legal authority for its intellectual property rights; or

- ◆ Collaboratively acquired by the ICDL and other private or public special collections through a contractual agreement with the rights holders

3. Reconsideration of Materials

Objections to materials included in the collection will be considered by the ICDL National Advisory Board of Librarians and/or the International Advisory Board. The Board(s) will use the established selection criteria in determining whether the item is appropriate for the collection. The recommendation of the Board(s) will be given to the Director of Collection Development for the Library. The final decision concerning the retention or withdrawal of a work will be made by the Director of Collection Development.

7.4 User Interface

All websites particularly a digital library is only as good as its interface. The interface is the entry point into the library. The user interface is the aggregate of means by which people (the users)

interact with a particular machine, device, computer program or other complex tool (the system). The user interface provides means of: Input - allowing the users to control the system, Output - allowing the system to inform. The junction between a user and a computer program.

User interface design important for several reasons.

♦ First of all the more intuitive the user interface the easier it is to use, and the easier it is to use and the less expensive to use it.

♦ The better the user interface the easier it is to train people to use it, reducing your training costs.

♦ The better your user interface the less help people will need to use it, reducing your support costs.

♦ The better your user interface the more your users will like to use it, increasing their satisfaction with the work that you have done. In this article I discuss:

The ICDL uses Graphical User Interface (GUI) that takes advantage of the computer's graphics capabilities to make the program easier to use (Figure-1). In ICDL, as maximum users are of 3-13 years age group, the GUI is appropriate. The ICDL interface uses most of the basic components of GUI such as:

♦ **pointing device**: The mouse that enables users to select objects on the display screen.

♦ **icons**: Small pictures that represent commands, files, or windows. By moving the pointer to the icon and pressing a mouse button, users can execute a command or convert the icon into a window.

♦ **desktop**: The area on the display screen where icons are grouped is often referred to as the desktop because the icons are intended to represent real objects on a real desktop. The ICDL interface is comprising of well-grouped desktop.

♦ **windows**: In ICDL interface no such frames are used by dividing the screen into different areas where in each window user can run different programs. But there is the possibility of opening separate window for certain purpose.

♦ **menus**: Most graphical user interfaces let the users to execute commands by selecting a choice from a menu. The ICDL uses different menus and drop-down sub-menus in each menu for various information. The animated presentations of menus create a attracting and elegant effect.
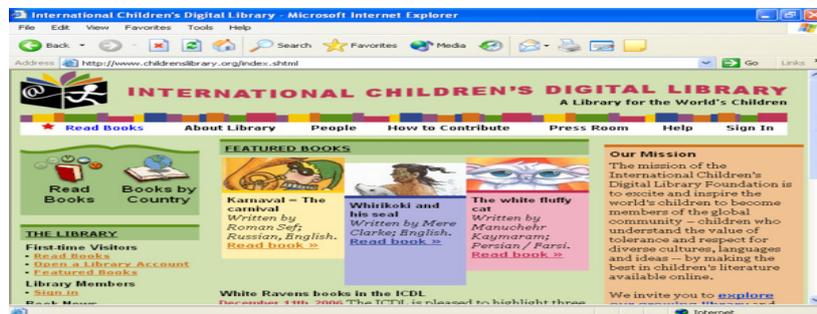
Figure-1: Screenshot of GUI of home page of ICDL

7.4.1 Presentation

Overall presentation of website is quite satisfactory in ICDL. It includes:

- Information flow: Information flow throughout the website is very much impressive.
- Navigation: One can search or browse the required information directly by using different attributes that are relevant for the children. Different types of book reader are there for presenting the pages of the book. Again the options like next page, zoom in, zoom out etc are present for smooth navigation.
- Visuals and icons: Meaningful icons and graphics are used that create a pleasant flavor to the eye.
- About texts: Texts are legible and nicely looking.
- Working with color: Colors used for the different components are really attractive and eye appealing mainly for the children.
- Screen design and layout: The ICDL uses tables for accommodating various elements of the web page.

7.4.2 Consistencey

Consistency must be acquired in many fields like visual appearance, control, and functionality etc. for increasing the recall of the users. It includes:

- Different functions keys always have the same effects throughout the site.
- Prompt and help messages appear in the same way and the same place throughout
- Different colors used in the website always have the same meaning
- Consistent use of headings
- Consistent use of terminologies and abbreviations throughout
- The main menus appeared on the top portion of the home page is absent in the other subsequent pages.

7.4.3 Organization

The organization of the information and different components of the web pages are very important for the users. The proper organization may lead easy navigation of the relevant information the user needed. It includes:

- Relative positions of different information in the page are nicely organized.
- Right linking of relevant information
- Well positioning of functional keys
- Inclusions of all relevant information in the small space mainly in case of advance search.
- Getting of information by minimal mouse clicking
- Systematic organization of information so that users get the information they need by minimum scrolling of pages

7.4.4 Interactiveness

It includes dynamic nature of pages where web page cans response to the users. It is very much effective a informative website like digital library. The ICDL has provisions of interactivity. In the searching mode, the Boolean search is very much interactive to the user's search query.

7.4.5 Attractiveness

It includes overall getup of the site. It may comprising of:

- Use of proper colors in accordance with the children's liking and choice

- Use of different graphics instead of texts.

- Use of colorful cartoon-like icons

- In location search there is the provision of graphical search by using world map which is very attractive to the children

7.4.6 User Friendliness

User friendliness is the ultimate aims of user interface. The design should be synchronize with the user's needs and behaviors. The ICDL website is very user friendly. The target audience i.e. children of different geographical and linguistic regions of the world, can easily find their relevant information through easy navigational tools. There are various provisions of browsing and searching of books. In case of Boolean search, the search phrase formulation is shown in the page explicitly (e.g. Main collection AND Ten to thirteen AND Pink covers AND hobbies and crafts = 1 Books). In every searching and browsing mode there is the provision of language of the book, which is very much user friendly as per the children of diverse linguistic regions are concerned. Again country wise books are also useful for the wide range of children.

7.5   Use, Usage and Usability

The usage and usability of digital library is gaining the focal point of study. Actually the use of any digital object is the ultimate objective of any website or digital library. Therefore the information must be uniform, consistent and well-organized, so that one can retrieve the relevant information by using navigational tools. The ICDL can be accessed through the commercial search engine like Yahoo, Google etc. The following search data are shown:

Google search engine

♦   Search by the term 'ICDL' fetched 775000 listing in 0.12 seconds. International Conference on Digital Library having URL http://static.teriin.org/events/icdl/ is in the top of the list and International Children's Digital Library in the 2nd position.

♦   Search by 'international children's digital library' lists 3520000 sites in 0.11 seconds

♦   Search by exact phrase "international children's digital library" through advanced search fetched 96800 listing in 0.14 seconds

Yahoo Search Engine

♦   Search by the term 'ICDL' fetched 775000 listing in 0.12 seconds. International Center for Distance Learning having URL http://www-icdl.open.ac.uk/ is in the top of the list and International Children's Digital Library in the 2nd position.

♦   Search by 'international children's digital library' lists 3810000 sites in 0.02 seconds

♦   Search by exact phrase "international children's digital library" through advanced search fetched 63500 listing in 0.31 seconds

Use and users' statistics

♦   The ICDL has been visited by over a million unique visitors since the launch in November, 2002.

♦   Google is the number one Web site directing Internet users to the ICDL, followed by Farsibooksonline and Yahoo.

♦   The users come from 166 different countries, most frequently from:

a.United States (50%) b.South Africa (15%) c.China (7%) d.United Kingdom (6%)

e.Canada (5%) f.Iran, Islamic Republic of (4%) g.Taiwan (4%) h.Philippines (4%)

i.Australia (3%) j.Egypt (2%)

♦   **Top books visited**: Our book preview pages have been visited over 650,000 times.

♦   **Book reader**: Our standard book reader is chosen most of the time to read books in the ICDL. The book readers receive the following use:a.Standard reader (52%) b.Adobe reader (23%) c.Comic reader (15%) d.Spiral reader (9%) e.Plus reader (1%)

♦ **Registered users**: On May 25, 2005, we launched a new interface that allows library users to log in with a user name and password. Currently, registered users can choose their preferred search interface and what language the library appears in. Kids can also choose a monster to guard their password. In the future, users will be able to personalize their search results, save favorite books on a bookshelf, and return to the last page they were reading. Here are some facts about our registered users:

a. 1082 adults, 508 children -1031 females, 560 males ,Preferred languages (of the nine languages the library is currently available in): 1.English (72%) 2. Spanish (11%) 3.Chinese (5%) 4.Persian (4%) 5.Arabic (4%) 6.Filipino (1%) 7.French (1%) 8.German (1%) 9.Hebrew (1%)

b. Adults can choose their preferred search interface, and they choose Simple Search 73% of the time, followed by Advanced (24%), and Location (3%).

♦ **Connectivity**:The connection speed of our users breaks down to 17% dial-up, 40% high-speed, and 43% unknown.

From the above data we can conclude that the library is used by varieties of users in all respect. We can say that the usability of ICDL is good as the aims of the Foundation is concerned. But still there are some scope of attaining the degree of usage and usability of the library. Different usage and usability criteria used in ICDL and gaps if any are enumerated below.

1) Graphics, 2)Text, 3)Content/Information 4).Updates 5).Layout/ Space 6)Presentation of information: It concerns the implications of using colours, fonts and display styles to present information. The colours used in the ICDL pages are very much eye soothing and also attractive. The display styles for pages in the book are very lucrative in the spiral reader (Figure-2).7)Categorisation of Information 8)Navigation,9)Colour, 10)Visual Appearance,11)Advertisements/ Pop-ups/Animation, 12)Downloading Time: It includes factors in designing that impacts speed of downloading. As all pages of books in the library are of scanned images, it takes some amount of time to be downloaded.

Figure-2: Screenshot of Spiral reader — book overview

7.6 Security/Privacy

Security/privacy is the vital issue for any digital library. The ICDL states "Feel secure using the ICDL knowing that we protect the privacy of our members, especially children". The International Children's Digital Library (ICDL) is committed to protecting the safety and privacy of the users, especially children. The ICDL does not require anyone to provide any personal information to use the site and no one is excluded from the site for not providing personal information. The ICDL does allow users to create an optional profile that provides access to extra features such as selecting a preferred reading language. If a user chooses to create a profile, ICDL ask them to provide the following personal but not personally-identifiable information (only a user name and password etc. are required):

- ◆ User name
- ◆ Password
- ◆ Age
- ◆ Gender
- ◆ Preferred reading language

users who register may choose to use their email address as their user name. This information will only be used for two purposes. First, it allows the ICDL to send users a new password if they forget their old one.

Second, adult users who register with their email address may also opt to be on our mailing list to receive announcements about the ICDL

7.7 Cost effectiveness

As information are only accessed through network, the cost effectiveness is the vital issue when evaluating a digital library. The books can be accessed in ICDL without paying any money; it is absolutely free of cost.

7.8 Services: Real Life Situation

Services are comprised of searching and browsing of relevant information using the various tools provided in the website. This is the ultimate objective of any digital library. The search statistics may help to develop better interface. Between May 25, 2005 and August 31, 2005, ICDL looked at what the library users were searching for. This data helped to improve the search interfaces and understood what library users are looking for in a digital library and accordingly new interface was designed on March 22, 2006. Users overwhelming prefer the Simple search interface. The usage of the various search interfaces breaks down to the following: 1.Simple search (71%) 2.Advanced search (15%) 3.Text or keyword search (10%) 4.Location search (3%) 5.Author search (1%) .The services may be evaluated on the basis of following sub-criteria:

7.8.1   Availability

Most of the books included in the ICDL are always available through the searching and browsing tools. Actually I tried for 100 books and no such false link is there. As the total collection is not verified I prefer to use the term 'most of the books'.

7.8.2   Searchability

Searchability basically includes effectiveness in searching and browsing so as to get required pages of the books. At first it is better to enumerate the provisions of searching and browsing in the ICDL site.

a)   Searching

1. **Simple search**: Various search facilities are there in the simple search. The menus/icons are arranged in four sides of the page (Figure-3). The provisions are:

Figure-3: Screenshot of simple search in ICDL

2. **Location search**: In location search there are two versions

◆   Graphical version using globe having world map and provision for turning the globe by clicking the arrow provided for the purpose. This is effective for little children who just learning the locations in the world map (Figure-4).

◆   Text version by using names of continents and countries.

Figure-4: Screenshot of location search

3.   Advanced search: Advance search is composed of using various criteria for single search. Actually it is Boolean search using only AND operator. The criteria are:

- Keywords
- Language
- Audience: Age, collection etc.
- Appearance: Cover color, format, length, shape etc.
- Content: Continents, character, countries, time period
- Type: Feeling, rating etc.
- Subject: Culture, history, science & nature, animals etc.

The beauty of advance search is "unified search using more than one criteria used in the simple search at a time". The stating of search formulation statement is another effective feature in the advance search. The statement (e.g. Main collection AND Ten to thirteen AND Pink covers AND Hobbies and crafts= 1 Books) may increase the confidence of the users.

4.   Keyword search: As the pages of the books are of scanned image in TIFF format and no provision of using OCR technology, full text search is not possible. It only includes the meta-information about the books.

Directions

1. Typing the keywords into the search box
2. Selecting the language user is searching in from the pull down menu
3. Clicking the Search button to search for books with matching information

b)   Browsing

Browsing of books will be done through four ways mentioned below:1,Recently added books 2. Award-winning books3.Full book list 4.Author & illustrator list The browsing through Author & Illustrator list are effective but there are the oddness: no such indication element for author and illustrator; names are alphabetically arranged according to the surnames but no rendering of names are there which create confusion to some extent.

7.8.3   Referral

The ICDL provides referral service by mentioning link through which one can get the books. When we select any book, the metadata are listed in the right side to the cover/title image of the book. At the end of metadata, there are the provisions of links stating the addresses of the organizations from which one can purchase the same.

7.8.4   Links

The links in the website are very much systematic and relevant. Not so false link is there in the page so far as my verification is concerned.. The links in the 'announcement' in the home page is not

retrieved. After selecting a book to be retrieved there is the provision of link to the similar books available in the ICDL. No such external links are there for similar books the ICDL has. The links among the different pages are explicitly shown in the Sitemap menu.

7.9   Policy

The policy of any digital library like ICDL, includes the written guidelines for attaining consistency and effectiveness in the web pages. The policy in the present study is comprised of collection development, copyright, privacy and link.

7.9.1   Collection development policy

Examination of the criteria used to select books that are appropriate for the ICDL collection. All works will be presented in their entirety and will not be adapted or abridged from their original published form; however, works originally published as abridgements or adaptations of other works may be included in the collection. Materials included in the collection may be:

- ◆ currently available in print and within copyright;
- ◆ out of print but within the copyright protection of the country in which they were
- ◆ published; or
- ◆ freely available in the public domain.

7.9.2   Copyright Policy

Find out how ICDL protect the interests of rights holders while sharing their books with audiences throughout the world. The International Children's Digital Library respects the intellectual property rights and other proprietary rights of others. The ICDL has negotiated rights to include the books in the collection. These rights do not allow downloading, printing, or further distribution of the books in ICDL by the users. To obtain permission to download, print or distribute the books in ICDL, the user must be contacted to the rights holders directly. The ICDL software does not support printing, emailing or saving of material accessible through the ICDL If any user believes that his copyright has been violated by material available through the ICDL, there is clear statement on behave of the ICDL Copyright Agent with the following information:

- ◆ Identification of the copyrighted work that user claim has been infringed;
- ◆ An exact description of where the material about which user complain is located within the ICDL collection;
- ◆ Users address, telephone number, and email address;
- ◆ A statement by user that he has a good-faith belief that the disputed use is not authorized by the copyright owner, its agent, or the law;
- ◆ A statement by user, made under penalty of perjury, that the above information in users notice is accurate and that the users are the owner of the copyright interest involved or are authorized to act on behalf of that owner;

7.9.3 Privacy Policy

ICDL is always trying to protect the privacy of the users/members, especially children. The privacy is maintained particularly for the personal information of the users. More provisions are already analyzed in the Security/privacy section.

7.9.4 Links Policy

Links appearing on the ICDL web site must conform to the selection criteria for the books included in the collection. The sites linked should expand, enhance, and support books included in the collection. Sites linked to the ICDL must:1.Have a high degree of appeal for children from ages 3-13; 2.Support the understanding and use of books in the collection; 3.Be appropriate for the age levels of the intended audience for the collection; 4.Include content that is relevant and of interest to children ages 3-13; 5.Support the understanding of similarities and difference among and within countries, peoples, and cultures; 6.Contribute to children's understanding of the diversity of the global society; and, 7..Meet professionally accepted quality standards in terms of content, format, and presentation.

7.10 Legal Aspects

Some books are very old and others are just like those that user might find in school or public library. Most of the old books are out of copyright. This means that nobody owns these books so ICDL Foundation can put them on the ICDL without getting permission from anybody. For the newer books, the authority must get permission from the people or the company that owns the words and the pictures in the books. All of the books in the ICDL must meet the collection development standards. These standards are the rules that use to choose which books can go into the ICDL. The Advisory Board of Librarians and International Advisory Board created the rules for the purpose. Some of the legal aspects are included in the section 'Copyright policy'.

8. Constrains

- No main menus in the same fashion in the pages other than home page.
- No links in few places
- The ICDL software does not support printing, emailing or saving of material accessible through the ICDL
- No born digital objects are included in the ICDL
- External hyperlinks are few
- Some contradictory data exit
- The scanned pages need to remove noise
- No provisions of audio that are interesting to the intended audience
- No provision of machine translation

9. Recommendations

The ICDL has its strong objectives and planned policy. According to the aims and objectives of ICDL Foundation, the website of International Children's Digital Library is very impressive in all respect. Still some recommendations are given for the overall development of the ICDL.

- ◆ Some good animations may be inserted to the menus/icons to add the extra flavor
- ◆ Besides books, some non-book material like audio, video, animation etc. may be included to instigate appetite of the children
- ◆ The scope will be given for inclusion of born digital books
- ◆ Digital noise in the scanned images have to be removed for better viewing the pages
- ◆ Some external links for similar information may be sited to the web page

10. Conclusion

In conclusions, as per the aims and objectives are taking into consideration, the ICDL is unparallel. They strictly follow the pre-defined policy. The ICDL always promote cross-cultural development among children, and therefore it intentionally not use the machine translation. But it mentions some volunteer translator for the same. Within a short period of time ICDL has flourished rapidly in well-organized way. It maintains the list having date wise addition of books in the collection. The ICDL is very transparent in its each policy and function.

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About Authors

Ms. Sibsankar Jana, Asstt. Librarian, University of Kalyani, Nadia, West Bangal.

Dr. Subarna K Das, Senior Lecturer, Dept. of Library and Information Science, Jadavpur University, Kolkata-700032