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Customization of KOHA Integrated Library System (ILS) Interface for Better Usability

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Abstract:

This study describes the usability of KOHA Integrated Library System (ILS). KOHA is an integrated library system widely used in Nepal. The main objective of this paper is to compare the usability of KOHA ILS before and after the customization of the interface. For this, five military libraries in Nepal have been purposively surveyed which are currently using customized version of KOHA ILS. The questionnaire was developed to address the eight usability matrices. The study found that all of the military libraries surveyed have been using KOHA ILS. Before customization and update to the latest version of KOHA the librarians and the users were unable to utilize the full features of the software. It is also found that the customization of interfaces has improved the usability of KOHA ILS. Hence it is concluded that the customization of interface is required for the better usability.

Keywords: *KOHA Integrated Library system; Library software; Library automation; Cataloguing software; Software usability.*

Introduction:

KOHA is the first free library automation software. It is in use all across the world, and a growing user community that works together to achieve their technological objectives which guides its development. The feature set of KOHA keeps growing and changing to satisfy the demands of its user base. KOHA is a full enterprise-class ILS with comprehensive capability, including basic and advanced choices, and is used globally in libraries of all sizes. KOHA comes with modules for authorities, flexible reporting, label printing, multi-format notices, and offline circulation for times when there is no Internet connectivity, acquisitions, circulation, cataloging, serials management, cataloging, authorities, and much more. KOHA functions for multi-branch and single-branch libraries, as well as consortia of various sizes (KOHA Community, 2023).

The majority of libraries in Nepal also use KOHA ILS for automation. With only minor changes to the Cataloguing interface, KOHA's default version has been used. There

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has never been any usability testing of the software before its full fledge implementation. The software's usability testing demonstrates its viability. Usability in the context of a library or information center refers to how simple it is to use, how effective it is, and how satisfied users are with the experience. The degree to which a product can be used by specific users to achieve specific goals with effectiveness, efficiency, and satisfaction in a specific context of use is another explanation of usability (CRSC, n.d.). Nielsen Norman Group (2011) states the 5 characteristics of usability;

- Learning ability: Users should be able to learn the system easily.
- Efficiency: Users should be able to use the system efficiently.
- Memo ability: Users should be able to remember the system easily.
- Errors: The system should work as correctly as possible and free of major errors.
- Satisfaction: Users should take pleasure in using the system.

At the present time, most of the libraries in Nepal have been automated. In order to support raising educational standards, libraries and information centers now have a greater responsibility to provide their users with access to the most current and pertinent information. This is impossible without a strong library and information system available. Since open-source software is widely available, any library can put an open-source Integrated Library System (ILS) into place at a very low cost.

1. Statement of the Problem

Libraries in Nepal have been using KOHA ILS for more than a decade. Usability testing is must before the implementation of any software. However, the usability of KOHA ILS has never been tested. The customization of the software is also never taken in consideration. This has created difficulty for both the librarians and the library users.

2. Objective of the Study

The main objective of this study is to measure the usability of KOHA ILS before and after customization of the interfaces.

3. **Review of the Literature**

Few studies have been conducted on usability and use of the KOHA ILS. Some of those literatures are included below.

The results of Akinbobola & Adeleke (2013) imply that the KOHA software satisfies the requirements of library staff and has the capacity to do so effectively and efficiently. They added that library staff members have the skills and confidence to use computers and function well with the KOHA software.

Research, on the usability of KOHA in university libraries in Nigeria, conducted by

Akerele and Agunbiade (2020) assessed the system's capabilities and graphical user interface. They discovered that KOHA was user-friendly and offered good functionality for library patrons. Similar to this, Shaik and Hussain's study from 2021 in India assessed the usability of the KOHA OPAC among library users and found that while the system was generally simple to use, there were still some areas that required development to improve usability.

Users of KOHA OPAC at a Nigerian university reportedly had issues with the implementation of search tools, display options, and system speed, but generally the users displayed a favorable view of KOHA OPAC, according to Yusuf & Adewuyi (2020). Similar to this, Iqbal & Warraich, 2012 used a combination of observation, interviews, and questionnaires to perform a usability evaluation study of KOHA OPAC among university libraries in Punjab. The study found that while the system was generally simple to use, there was room for advancement in the search capabilities and display options. Both the study agree that KOHA OPAC is a user-friendly system for finding information.

According to Otuyalo & Babalola (2021) the OPAC's usage in terms of effectiveness, efficiency, and user-friendliness could provide a hurdle. Therefore, they looked at how KOHA OPAC usage by students in Polytechnic libraries in South-West Nigeria was affected by usability. For the study, a survey research design was used. In the three Polytechnic libraries in South-West, Nigeria, there were 10,615 registered users. The results showed a strong, favorable correlation between OPAC usability and student use at Polytechnic libraries in South-West Nigeria. OPAC usage and usability were average, indicating that students' use of it hasn't yet been optimized. The study came to the conclusion that students' use of OPAC in Polytechnic libraries in South-West Nigeria is influenced by usability.

Khatun (2014) found that, users were generally satisfied with the navigation, graphics and layout of the KOHA interface. The OPAC screen has the provision for searching title, keywords, author, subject, class or document type and item number. Most users liked the OPAC options, although many naive searchers had no idea about ISBN and call number.

A comparative study by Yang, Hofmann and Weeks (2009) confirms that KOHA is an ILS which has a modern web interface, rich content, multi-faceted navigation, keyword search, user contributions and the Rich Site Summary (RSS) feed. KOHA is a web-based, multilingual integrated library system that meets the automation needs of medium to large libraries around the world. KOHA meets all of the functional requirements of the Library Management System. It is a complete integrated library system based on MARC and customized to meet the needs of libraries.

An open source library search engine called VuFind enables users to look up and navigate resources outside of the traditional OPAC. After two years of testing, Villanova University's version 1.0 was made public in July 2010. VuFind offers 4,444 flexible keyword searches through a straightforward interface akin to Google (Henry, 2015). According to

Denton & Coysh (2011), VuFind offers a single search box that, in addition to combining the traditional catalog and our ERM, also gathers content from our DSpace and instances rather than requiring users to search in two different locations.

Lambodara & Srivastava. (2016) opine that, utilizing information technology, which calls for effectiveness and knowledge in all areas of libraries, has the ability to always increase the quality of library services and resources. The backbone of every library can be referred to as information technology. Today, it is significantly simpler to store, retrieve, send, and manipulate data or information. The information can be transmitted and communicated easily and effectively. We can find all the information we need on a single platform with the aid of a discovery tool. An open source library search program called VuFind gathers data from various servers, sources, and incompatible formats like the Google search engine. It provides users with automatically categorized and correct information according on their needs.

According to Ravikumar (2022), an online National Union Catalogue is needed to save users' time in searching for and retrieving items. The Union Catalogue is a single database that allows end users to search a variety of library catalogues through a single interface. To enable this function, it is proposed to exploit r open-source software, VuFind, which creates a single searchable index using bibliographic data harvested from OPACs and other digital repositories. To connect the KOHA ILMS with VuFind, a technological solution is proposed using KOHA Rest API and Multi Backend driver of VuFind. This method is more secure than other methods and eliminates the need to share KOHA database credentials with others.

The above papers have not explored the usability of KOHA ILS after the customization of the interface. This paper intends to fulfill this gap.

4. **Methodology:**

KOHA's usability has been examined through in-person testing before and after customization. Ten librarians from five military libraries in Kathmandu (2 each from those libraries) who have been using customized version of KOHA ILS were the key respondents of the study. The questionnaire was designed to evaluate eight usability matrices of KOHA ILS before and after customization of the interface. The study is limited to the libraries that have used the latest customized version.

5. Customization of the Interface:

The customization of the interface has been done in major three areas namely,

- total number of biblio records display
- search from biblo number
- union catalog using Vufind

5.1 Total Number of Biblio Records Display:

This customization can display the total number of bibilo records available in the library. This feature enables the user and the librarians to easily identify the number of records in the holding of the library from the home page of the Koha interface without using any report generating tools.

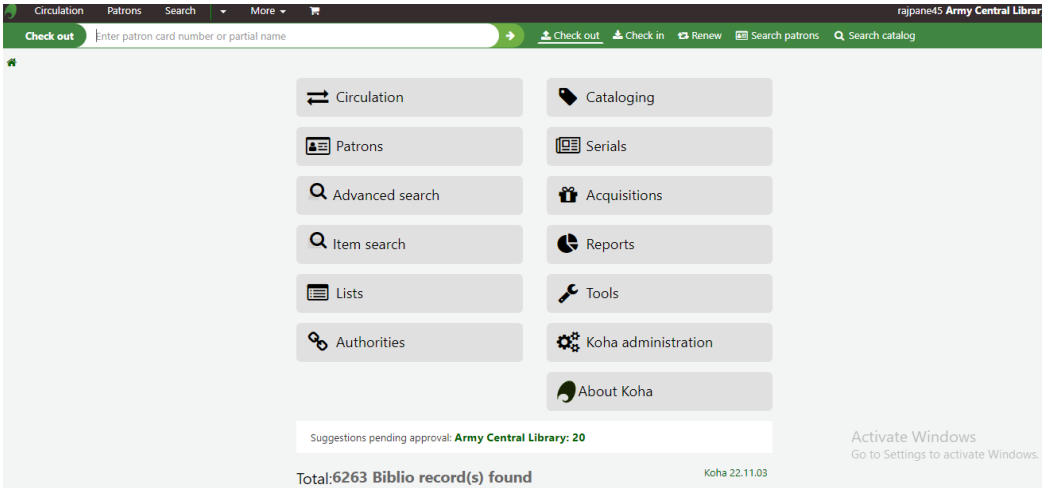

Fig. 5.1: Total Number of Biblio Records Display

5.2 Search from Bibilo Number in Staff Client Interface:

This enables the librarian and users to easily search the catalogue using biblio number by saving the time of both the parties.

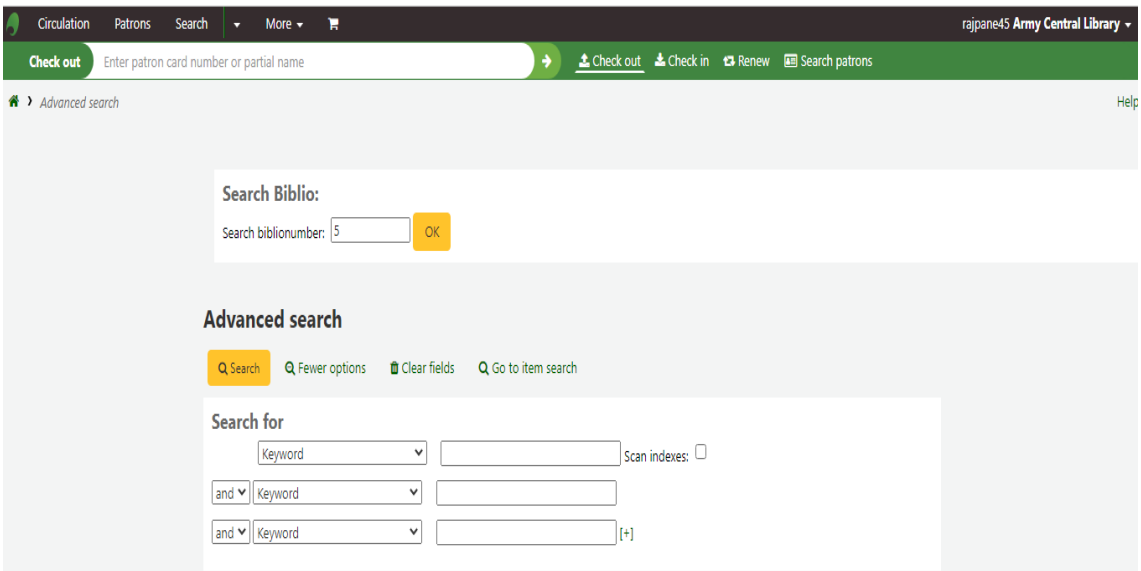

Fig. 5.2: Search from Bibilo Number in Staff Client Interface

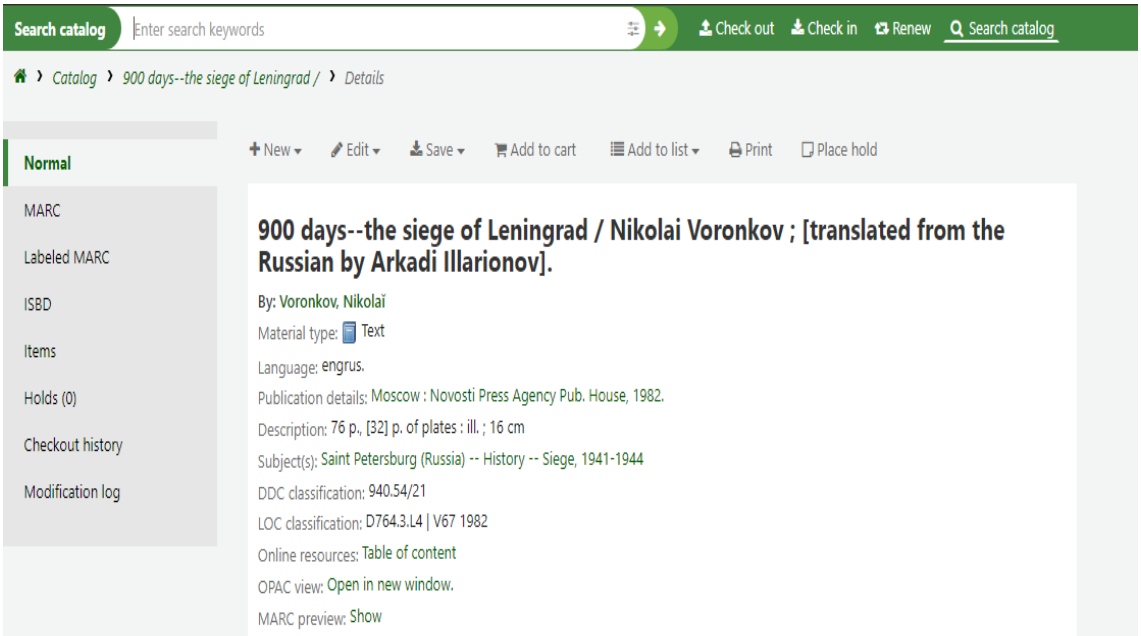

Fig. 5.2.1: Search from Bibilo Number in Staff Client Interface

5.3 Search from bibilo number in OPAC interface:

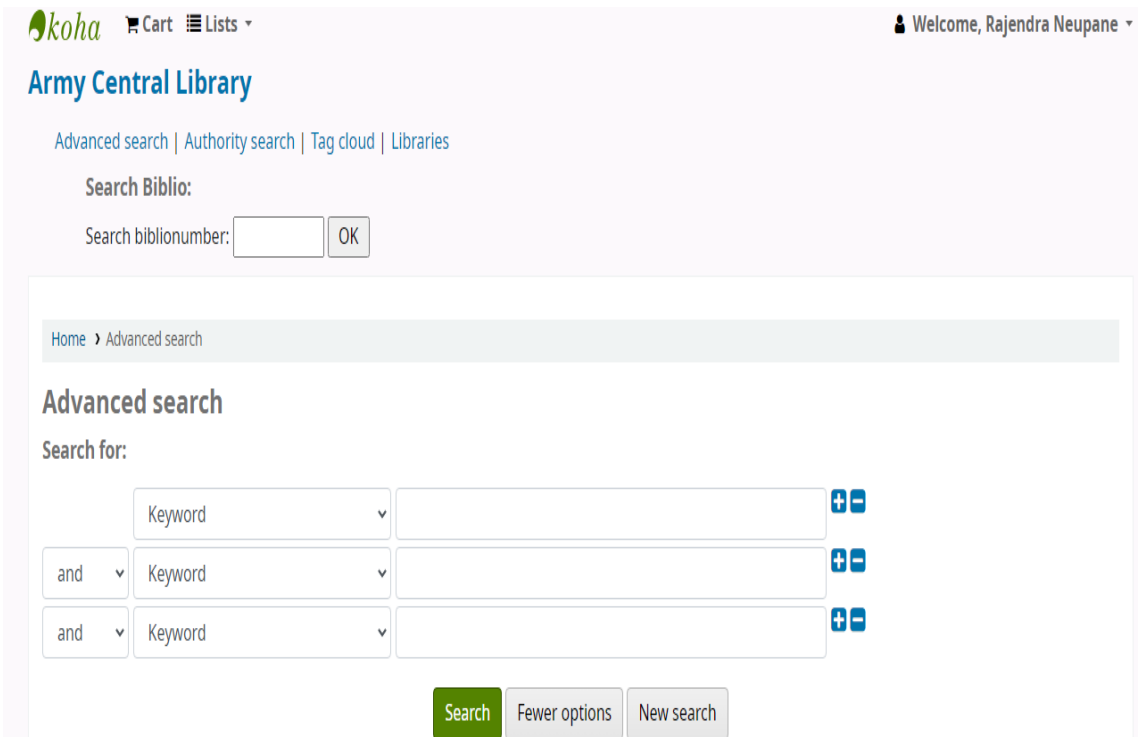

Fig. 5.3: Search from bibilo number in OPAC interface

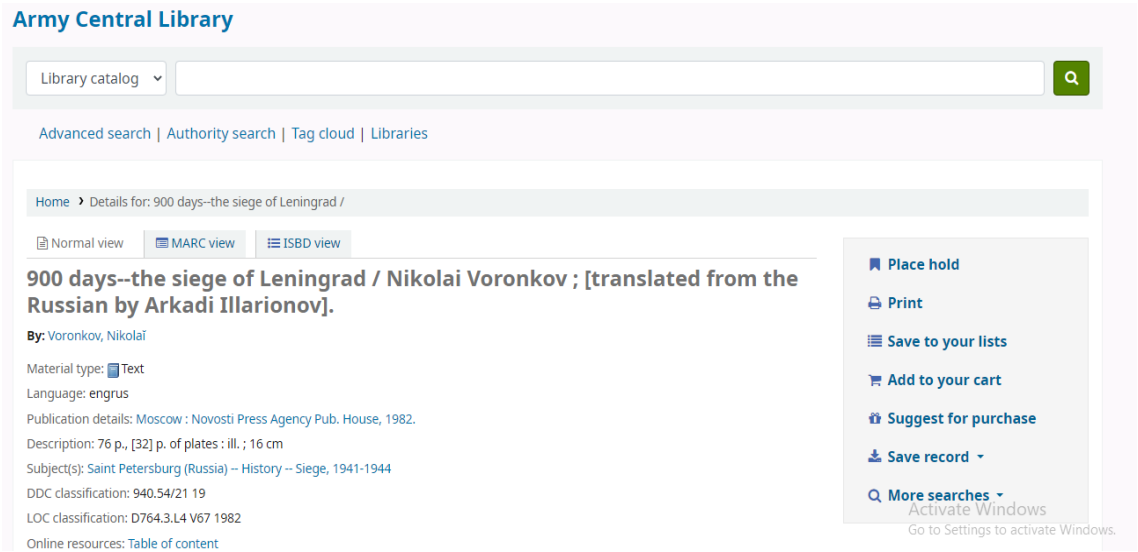

Fig. 5.3.1: Search from bibilo number in OPAC interface

5.4 Union Catalogue of More Than Two Libraries:

Union catalog is the catalogue of two or more than two libraries. This catalogue enables the users to locate the catalogue of various libraries from single interface. VuFind discovery tool is used to create the union catalog. This customization has displayed both catalogue and full text of the holding of the library.

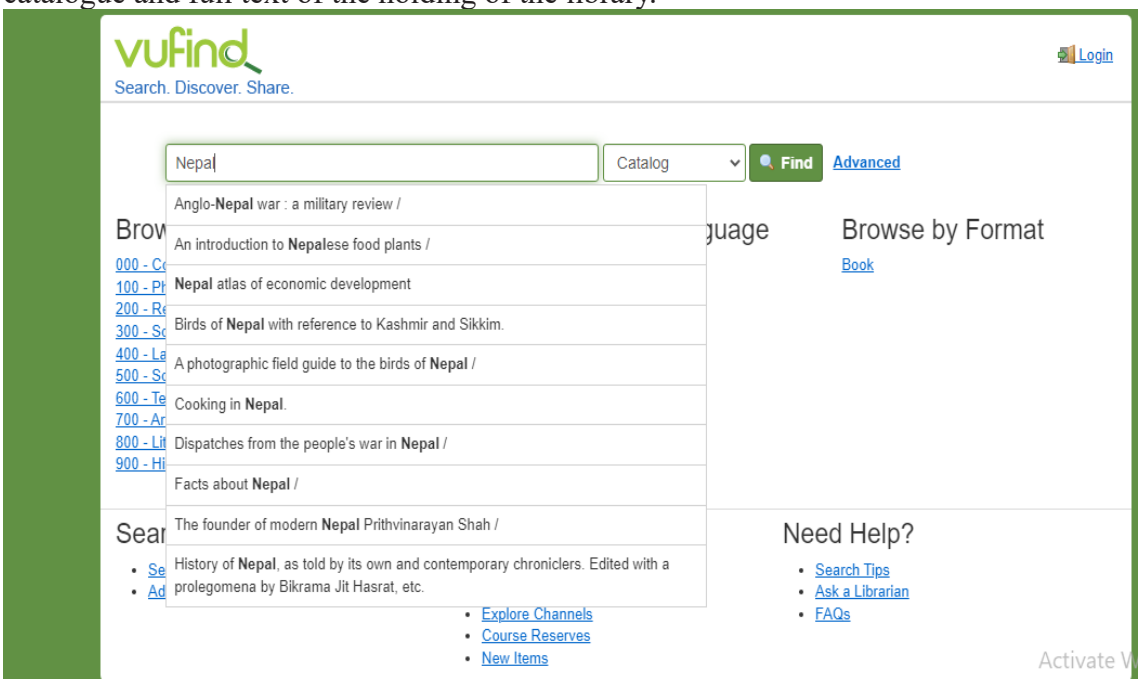

Fig. 5.4 : Union Catalogue of More Than Two Libraries

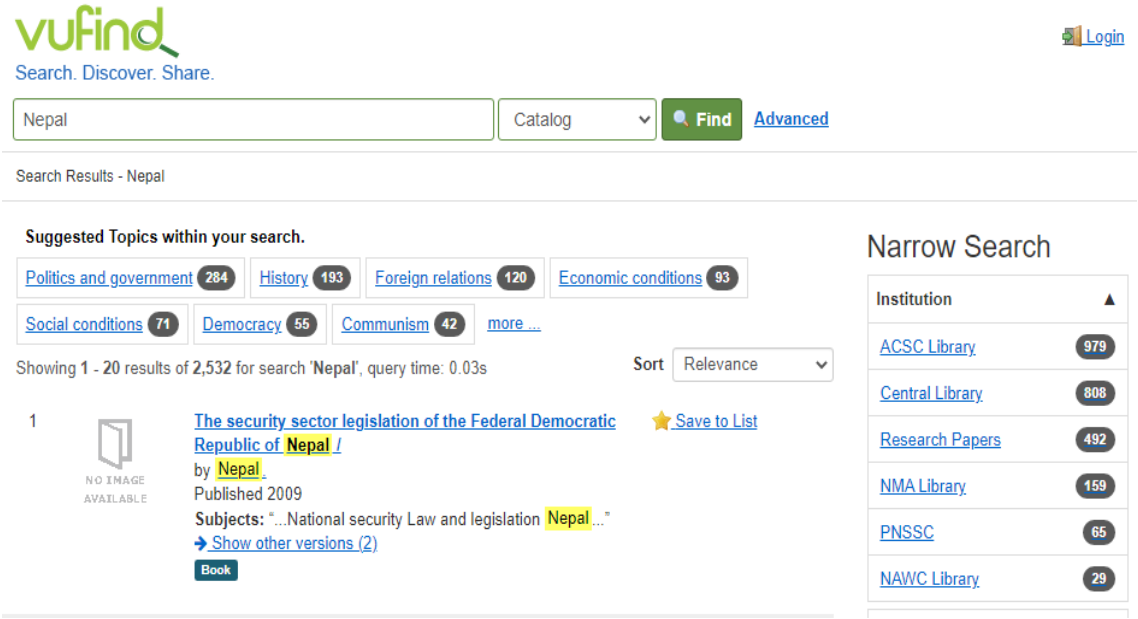

Fig 5.4.1: Union Catalogue of More Than Two Libraries

Findings:

Based on the respondent's answer before and after customization, the following result has been deduced.

6.1 Learnability:

Learn ability is the simplicity of the interface. This refers to the easiness of the software to understand quickly. More than 90% of users claimed that the interface of KOHA ILS is learnable both before and after customization of the interface.

		Yes	No
Before	Learnable	90%	10%
After		90%	10%

6.2 Efficiency:

Efficiency refers to how quickly and easily the task is achieved. 71% of respondents reported that KOHA is efficient. However, 29% of respondents did not find the KOHA interface efficient. According to the respondents the customization of the interface increases the efficiency to 83%.

		Yes	No
Before	Efficient	71%	29%
After		83%	27%

6.3 Memorability:

Users should be able to remember the system interface and the functions easily if the system is memorable. 96% users were able to memories the KOHA interface both before and after the customization.

		Yes	No
Before	Memorable	96%	4%
After		96%	4%

6.4 Error Rate:

A good interface or usable product should be error free while performing different task on it. The 23% users found the KOHA ILS interface having error during task performance where as 77% of them did not find any error on KOHA interface. The customization of the interface decreased the error rate by 14%.

		Yes	No
Before	Error	23%	77%
After		9%	91%

6.5 Simplicity:

Simplicity is ease of use and understanding and these make a system a successful one. The OPAC interface is simple to use 97% of the respondents reported the simplicity of KOHA interface. The customization has also not significantly complicated the system.

		Yes	No
Before	Simplicity	97%	3%
After		95%	5%

6.6 User Friendliness:

Any system must be user friendly to be it successful and popular. It should reduce the efforts of the users and exploit the results they get from with respect to anticipated results. 80% of the users found the KOHA interface user friendly. The customization of the interface has made the software more user friendly.

		Yes	No
Before	User-friendly	80%	20%
After		90%	10%

6.7 Relevancy:

While performing search task in the system it should show the maximum relevant results. This facilitates the users to amplify their satisfaction level. 79% of the users found the KOHA interface showing relevant results. The software become 98% relevant after the customization.

		Yes	No
Before	Relevant	79%	21%
After		98%	2%

6.8 Satisfaction:

User satisfaction is based on all of the previously mentioned aspects of KOHA ILS interface. To be a system satisfactory users must get the relevant results and should fulfill the desired expectation. Satisfaction of users is the key achievement factor for any interface. 85% of the respondents reported the KOHA ILS interface has fulfilled their satisfaction. The respondents were almost fully satisfied with the software after customization.

		Yes	No
Before	Satisfied	85%	15%
After		99%	1%

7. Discussion:

The findings of the study revealed that the usability of KOHA ILS in the libraries under study is satisfactory. The usability of the software after customization as per the need of the users and the librarians is much better than in its available version. KOHA ILS is efficient, error free, easily learnable and simple to use. Similarly, the software has become more user friendly, relevant and the users are more satisfied with the customized features in the latest version. The software becomes more functioning if it is customized by combining the features of other open-source software like VuFind and D-space. The future researches can be conducted in the integration of features of VuFind and D-space with KOHA ILS for better usability.

8. Conclusion:

The usability of an open-source integrated library system determines its success or user-friendliness. One of the most popular open-source integrated library systems in use is KOHA. KOHA ILS, an integrated library system, has provided for both academic libraries, end users and librarians. According to this study, in the military libraries under study, KOHA ILS has an excellent usability metrics. The software's usability has improved as a result of the customization. In developing nations like Nepal, the KOHA ILS is advised as a feasible option for library automation.

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