

## Using digital and traditional libraries in developing countries

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**Abstract.** Given the existing challenges in accessing print-based publications in developing countries, digital libraries are seen as a good alternative. Thus, it is important to understand how such libraries are used in these contexts, especially when compared with the usage of traditional libraries. This paper analyzes and compares the usage of the digital and traditional libraries of the University Jean Piaget of Cape Verde, aiming at understanding the way they are used, and the relation between the access to the existing information resources in these two libraries.

**Keywords:** digital libraries; traditional libraries; developing countries.

Several techniques have been used to study the usage of digital libraries (DLs) [1]: diary study, questionnaire, observation, usability testing, focus group, interview, and logs. In order to perform a good study on the usage of digital libraries, the utilization of distinct data collecting mechanisms is a critical factor [2]. Thence, in order to study the usage of the University Jean Piaget's (UniPiaget) digital library, several mechanisms were used: (1) DSpace logs, to provide some DL usage statistics: number of accesses, number of downloads, etc.; (2) Google Analytics, to provide several additional information such as: access per regions, how often the same user returns to the DL, etc. (3) online survey, to collect information on the users characteristics and on the context on which they use the DL. 97 people responded to this online questionnaire.

When comparing a digital and a traditional library (TL), there are some important indicators which should be considered [2]: the usage of the library (number of visits, number of visits vs target public, etc.), usage of materials (how many times a certain item was used) and access to materials (number of searches). In order to understand how the UniPiaget's traditional library was used, Bibliobase (the library system used at the University Library) logs were analyzed. These logs store information about the usage of resources at the library. All the materials that were available in the DL were also available in the TL, but not all resources available in the TL were available in the DL. Thus, the comparative analysis involved only the materials that were available in the two libraries. This study on the usage of UniPiaget's digital and traditional libraries took place during 142 days. Some key findings are (table 1):

**Table 1.** Usage of digital vs traditional libraries: some indicators

| Indicator                    | Traditional library | Digital library |
|------------------------------|---------------------|-----------------|
| Items view                   | 89                  | 6083            |
| Number of accessed items     | 41                  | 161             |
| Percentage of accessed items | 25%                 | 100%            |
| Average daily item access    | 0,6                 | 42,8            |
| Average item access per user | 2,1                 | 3,0             |
| Average access per item      | 2,1                 | 37,8            |
| Total users                  | 43                  | 2050            |
| Average new user per day     | 0,3                 | 14,4            |

- Usage of the library - the DL was accessed 2951 times by 2050 users. By its turn, the TL had 1912 users, but only 43 of them (2,2%) visited it; they used the collections for 89 times. Therefore the DL was accessed 33 times more than the traditional library and the number of users was 48 times higher.
- Materials usage and access - there were 6083 accesses to the DL resources (about 43 accesses per day); 2279 searches were made and each item was accessed 38 times. In the traditional library, there were 89 accesses to the available resources (0,6 access per day); 41 materials were viewed out of 161 available (25% of the materials were used). Thus, the resources in the DL were accessed 68 times more than in the traditional library.
- Users - All the TL users were students and lecturers of the University. More than 90% of the respondents to the online survey were members of the academic community of the University who use the DL mainly at the University.

These numbers indicate that in fact materials were much more used in the digital library than in the traditional library. While users from 38 countries could access the DL (2050 in total), the TL was used only by some members of the academic community of the University (41 students and 2 lecturers). This better visibility was not only outside the country but also at domestic level: 65,4% of those who accessed the DL, did it from Cape Verde. On the other hand, 95% of those who responded to the online survey, were from the University.

In conclusion, this paper has shown that in developing countries, characterized by lack of print-based publications, the usage of DLs can highly contribute to increase the visibility and usage of information resources even among people from these regions. Resources that are available in both, digital and traditional libraries, can be more used in DLs than in TLs.

## References

- [1] Bryan-Kinns, N., Blandford, A.: A Survey of User Studies for Digital Libraries. Working Paper (2000)
- [2] Neumann, L., Bishop, A.: From usability to use: measuring success of testbeds in the real world. In: Harum S., Twidale, M. (ed.) Successes and failures of digital libraries, pp. 58-69. University of Illinois., Urbana-Champaign, IL (2000)