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# ANALYSIS OF AUTOMATION TRAINING EFFECTIVENESS ON LIBRARY PERSONNEL IN SELECTED UNIVERSITY LIBRARIES IN TAMILNADU- A CASE STUDY

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*Abstract*
*Technological advancement and its impact in information and communication domain drive to highly sophisticated and well equipped library system in the modern higher education institutions so that the needs and wants of research scholars and faculty members will be met. The conventional and orthodox libraries mainly cope up with collection and preservation of the document rather than retrieval and dissemination of the information that the library meant for. Today we have automated library, digital library and virtual library everywhere and having trained library personnel and information officers available in plenty. The need for the trained and skilled library personnel is vital and it can take the knowledge centers into new and needy areas of information exchange. This study aims to analyzing the effectiveness of the automation training in the University library, which would give solid idea about the efficiency and endurance of the library staff and its effective functions towards achieving goals and objectives of the library. Evaluation of the effectiveness of training program consist theoretical, methodological and statistical analysis and presentation, this case study emphasizes the need of the automation training in University libraries so that the effective services to the users by the library staff could be studied.*

*Key words: Automation, Training, Productivity, Effectiveness, Measurement.*

## 1.INTRODUCTION
Training evaluation can be done based on the skill and competency that every participant gained during the training and its implications in their day today work process for the better performance. The factors considered while planning for the training are man, money and material, importantly the financial sources analysis is must for well developed software installation and operation, "Training is appropriate when your organization can expect to gain more benefit from the training than it invested its cost". Automation in the library is a vital phenomena of this technological bombarded society either to withstand or withdrawal from the completion. Conventional libraries still have reputation because of the worshiped documents and orthodox work culture maintained with its serenity. Availability of subscribed and Open Access Library automation software and their training modules, here the authenticated and supportive automation software is taken for study, "SOUL" (Software for University Libraries) training is the library automation and execution training given by the Information and library Network (INFLIBNET) Centre was established in May 1996 as an independent, autonomous inter-University Centre (IUC) of the University Grants Commission (UGC). "INFLIBNET is working in the field of library automation, database development, networking, and resource sharing" through this institution many University and College libraries are transformed its housekeeping work from physical to automated climate. "Library automation: The use of computers in circulation, acquisition, and catalogue and document retrieval in libraries is taught in this course". Thus automation and its training to the staff members in the library is an important function and procedure to the value added service with valuable sources.

In general following steps, which can explain how to elaborate and explain the need of the training;
1. Identifying the problem needs in an institution
2. Determining the design of the need analysis
3. Collection and Analyses of relevant data
4. Provide feedback and follow ups
5. Develop action plan

## 2. NEED FOR THE STUDY
This study has been undertaken to analyses the effectiveness and fruitfulness of the software training given to the library personnel of the modern ICT (Information and Communication Technology) enabled resources sharing

scenario in information centers so that the professionalism and service to the user of the librarians can be understood.

Planning for library automation has been defined as planning for integrated library management systems that computerize an array of traditional library functions using a common database as physical, spatial and temporal barriers to acquiring information continue to crumble, libraries must plan for a broader and more comprehensive approach to providing automated services. Libraries without automation and digitization are merely store houses rather than active access and retrieval. In this arena a well tech library and library staff is vital force for higher education empowerment and excellence.

## 3.REVIEW OF LITERATURE
Literature review is done by studying both Business management and Library and information science management journals and e-resources.

Kushwah, S.S et al. (2008) have submitted research paper on library automation system in India, given that the complete need and necessity of automation in library, types of software available and its strength and weaknesses so that the implication and training program will be based on its financial capacity and user needs. The main library automation he furnished is SOUL, Trodon, LibSYS, CDS/ISIS, ALICE, and SLIM. Among all the above said, he had selected two software (SOUL and LibSYS) for comparison with KOHA, an open source software doing well and used by many libraries across the globe

Sharma, P et al, (2009) enumerated issues and challenges met by library professional while technological changes have been taken place, and given suggestion to improve latest technologies with cost effective manner. He pointed out importance of Information and Communication Technology (ICT) in library functions and its infrastructure for a digital library project.

Haslinda, A and Mahyuddin, M. Y. conducted survey of effectiveness of training and development in the public sector using evaluation framework and transfer of training elements which give rise reaction level, learning level, behavioral change, Return of Investment etc, he elaborately discussed about the transfer of training like skills, behavior and explained how the organization benefits from various levels of training etc.

Rajput, P.S and Gautam J.N carried out a study to know status of library automation and problems in their implementation in special libraries, where they explain pre-automation problems like Paucity of funds, lake of administrative support, lake of trained staff, lake of fund for recurring expenditure and hesitancy in learning computer, at the same time post automation problems are high use of collection, extending of library services, sharing resources through network, prestigious for library, economical expenditure and high level of user satisfaction.

## 4. RESEARCH OBJECTIVES
The project focuses on the following research objectives:
1. To evaluate the effectiveness of software training given to library staff
2. To analyzes the satisfaction level and technical skill changes in their day to day work life.
3.  To analyze the acceptance of the staff with technology interface
4. To identify the productivity and efficiency change level after the training.
5. To examine the impact of the job behavioral changes after the training
6. To measure the learning level and knowledge gained through this training

## 5. METHODOLOGY
This study analyzed the efficiency and behavior changes happened after the training of SOUL (Software for University Libraries) in higher education institutions libraries in Tamilnadu.  "What is the effectiveness of training on four levels (Reaction, learning, behavior and result) there?"  This study was an attempt in exploring and analyzing the different categories of the staff members in the library and their opinion and impact on the

training and their effectiveness, how it will help the library to define and redefine the automation and operation activities by and large. Descriptive research design with survey method through questionnaire has been adopted. The researcher used both primary and secondary data for data collection to analysis the objectives.

## 5.1. Target Respondents
a. The target respondents for this study are the University library professionals, Technical and other administrative staff of the library who have attended the five days internal SOUL training.
b. The questionnaire have been reached personally and through mail to the staff members of the three major Universities like University of Madras, Chennai, Manonmaniam Sundaranar University, Thirunelveli and Gandhigram rural institute-Deemed University, Dindigul in Tamilnadu and 21,18 and 5 questionnaires received respectively.

## 5.2. Tool for Analysis
a. A fine tool of excel sheet have been made to feed and categories the available data so that formulation of the idea to set statistical analyses based on the data can be done.
b. Statistical tools like correlation, Chi-Square tests have been taken to analyses and to get final relationship with the findings and conclusion.

## 5.3. Nature of Data
In the survey the nature of data collected was primary, through the help of questionnaires. Each and every individual was issued a hard copy of the questioner and their views are collected and analyzed.

## 5.4. Tool for Data Collection
Questionnaire in the form of the multiple choices which are easy to be addressed and then they are categorized accordingly to the needs and requirements for analysis.

## 6. DATA ANALYSIS AND INTERPRETATION

### 6.1 Analysis
"In many ways the design of a study is more important than the analysis". the analysis of data requires a number of closely related operations such as establishments of categories, the applications of these categories to raw data through coding, tabulation and then drawing statistical inferences.

### 6.2 Data Interpretation
The data from each and every user were analyzed and interpreted individually and then complied together and presented in the form of tables and charts. In each table, the total respondents answering for a particular question is noted. Among them the alternate answers were given and traced, finally, the percentage of each answer for particular option is traced.

Interpretation is concerned with relationships within the collected data, primarily overlapping analysis. Interpretation also extends beyond the data of the study to include the results of other research, theory and hypothesis. Interpretation is done because,

- It is through interpretation that the researcher can well understand the abstract principle that works beneath findings.

- Interpretation leads to the establishment of explanatory concepts that can serve as a guide for future research studies.

- Researcher can better appreciate only interpretation why his findings are, what they are and can make others to understand the real significance of his findings.

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**Table – 1, Distribution based on performance of duty effectively**

|  | Respondents | Percentage |
|---|---|---|
| Very much | 15 | 34 |
| Almost | 26 | 59 |
| Somewhat | 3 | 7 |
| Total | 44 | 100 |

From the above table, 34% respondents are very much performance of duty effectively and 59%    of respondent are moderate and 7% respondent are to some extent. The most of the respondents   have performance of the duty at moderate level.

**Table – 2, Distribution based on behavioral change**

|  | Respondents | Percentage |
|---|---|---|
| Very much | 14 | 32 |
| Almost | 22 | 50 |
| Somewhat | 8 | 18 |
| Total | 44 | 100 |

**Chi-square Test of Independence**
"The chi-square statistic is used to show whether or not there is a relationship between two categorical increases in productivity and gender". It is a statistical analysis of two variables to find its goodness of fit of observed frequencies and expected frequencies of the test.

$H0$: Null Hypothesis - There is no significance difference between the associate factors level of increase in productivity and gender
$H1$: Alternate Hypothesis - There is a significance difference between the associate factors level of increase in productivity and gender.

| Table -3,Chi-Square Test of Independence | | | | |
|---|---|---|---|---|
| **Observed Frequencies** | | | | |
| | **Column variable** | | | |
| **Row variable** | **C1** | **C2** | **C3** | **Total** |
| **R1** | 6 | 14 | 1 | 21 |
| **R2** | 9 | 12 | 2 | 23 |
| **Total** | 15 | 26 | 3 | 44 |
| | Column variable | | | |
| Row variable | **C1** | **C2** | **C3** | Total |
| **R1** | 7.16 | 12.41 | 1.43 | 21 |
| **R2** | 7.84 | 13.59 | 1.57 | 23 |
| Total | 15 | 26 | 3 | 44 |
| Observed frequency | Expected frequency | **(O-E)** | **(O-E)$^2$** | **(O-E)$^2$/E** |
| 6 | **7.16** | **-1.16** | **1.343492** | **0.187662** |
| 14 | **12.41** | **1.59** | **2.530992** | **0.203963** |
| 1 | **1.43** | **-0.43** | **0.186467** | **0.130231** |

| 9 | **7.84** | **1.16** | **1.343492** | **0.171344** |
|---|---|---|---|---|
| 12 | **13.59** | **-1.59** | **2.530992** | **0.186227** |
| 2 | **1.57** | **0.43** | **0.186467** | **0.118906** |
| **Data** | | | | |
| Level of Significance | **0.05** | | | |
| Number of Rows | **2** | | | |
| Number of Columns | **3** | | | |
| Degrees of Freedom | **2** | | | |
| **Results** | | | | |
| Critical Value | **5.9914645** | | | |
| Chi-Square Test Statistic | **0.99833** | | | |
| p-Value | **0.6070** | | | |
| **Do not reject the null hypothesis** | | | | |

**Inference**
Hence, the calculated value is lesser than the table value at 5% level of significance with 2 degree of freedom. The Ho Null Hypothesis is accepted and alternate hypothesis is rejected.

**Correlation**
"Correlation analysis is one of the most widely used and reported statistical methods in summarizing medical and scientific research data. It is often useful to determine if a relationship exists between two different variables". This correlation method is to know the relationship of positivity or negativity and direction of the two variables in this study.

**Correlation between the associate factors improvement in technical skill and the satisfaction of the training program**

**Table – 4, Correlation between status and technical skills**

| Q.No 09 | Professional | Technical | Non-Professional | Total |
|---|---|---|---|---|
| Fully Improved | 6 | 12 | 1 | 19 |
| Improved | 3 | 16 | 5 | 24 |
| Not Improved | 0 | 0 | 1 | 1 |
| | 9 | 28 | 7 | 44 |
| Correlation between status and Training satisfaction | | | | |
| Q.No 20 | Professional | Technical | Non-Professional | Total |
| Satishfied | 6 | 19 | 6 | 31 |
| Neutral | 3 | 9 | 1 | 13 |
| Dissatisfied | 0 | 0 | 0 | 0 |
| | 9 | 28 | 7 | 44 |
| | | | | |
| | Q.No 09 | Q.No 20 | | |
| | **x** | **y** | **xy** | **x^2** |
| | 19 | 31 | 589 | 361 |
| | 24 | 13 | 312 | 576 |

|  | 1 | 0 | 0 | 1 |
|---|---|---|---|---|
| Sum | 44 | 44 | 901 | 938 |
| Square of sum | 1936 | 1936 |  |  |
|  |  |  |  |  |
| **n =** | 3 |  |  |  |
| n^2 | 9 |  |  |  |
| (n^2 - 1) | 8 |  |  |  |
| **n  xy** | 2703 |  |  |  |
| (  x)(  y) | 1936 |  |  |  |
| **n  x^2** | 2814 |  |  |  |
| **n  y^2** | 3390 |  |  |  |
| **n  x^2 - (  x)^2** | 878 |  |  |  |
| **n  y^2 - (  y)^2** | 1454 |  |  |  |
| **Sqrt (n  x^2 - (  x)^2)** | 29.63106478 |  |  |  |
| **Sqrt (n  y^2 - (  y)^2)** | 38.13135193 |  |  |  |
| **Numerator = n  xy - (  x)(  y)** | 767 |  |  |  |
| **Denominator = Sqrt (n  x^2 - (  x)^2) * Sqrt (n  y^2 - (  y)^2)** | 1129.872559 |  |  |  |
| **Linear correlation ->** | 0.678837621 |  |  |  |

The relationship between the associate factors satisfaction of the training program and the improvement in technical skill is more correlated. The r value = 0.678837621. It lies between -1 and +1. Hence it is strongly correlated.

## 7. SUMMARY OF FINDINGS
- 48 % of the respondents are male gender and 52% of the respondents are female gender. The most of the respondent are Female gender.
- 20 % of the respondents are professional   and 64 of the respondents are technical and 16% respondents are non-professional. The most of the respondent are technical staff.
- 43 % of the respondents are said technical skills fully improved and 55 % of the respondents are partially improved and only 2% said not improved in technical skills.
- 93% respondents are said SOUL training improved productivity and efficiency and 7% of respondent are not improved. The most of the respondent are said SOUL training improved productivity.
- In terms of productivity percentage, 32% of the respondents are below 25%, 36% are in between 25% to 50% and remaining 32% said above 50%. The most of the respondent are above 50% 0f the SOUL training improve level of productivity.
- 31% respondents are in very much behavioral change and 50% of respondents are moderate and 19% respondents are to some extent.
- 77% respondents are satisfied with the automation training and 20% of respondent are neutral and 3% respondent are dissatisfied.
- It is found that there is no significance difference between the associate factors level of increase in productivity and gender.
- The relationship between the associate factors satisfaction of the training program and the improvement in technical skill is more correlated. The r value = 0. 678837621 It lies between -1 and +1. Hence it is strongly correlated.

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## 8. SUGGESTIONS & RECOMMENDATIONS

Based on the findings and conclusion the following suggestion and recommendations are offered for kind considerations. These are presented under the following heads.

### Involvement and interest of the top responsible persons

It is very important and need of the hour that the top management and academicians in the university may have much consideration and interest to develop and establish the state of the-art libraries so that the latest technology and training like automation and digitalization trainings can be happened in higher education institutes libraries and it will have much benefit to the students and faculties in terms of product and services.

### Individual interest

Every library professional and technical staff in today's library are well equipped in terms of education by getting master degrees and doctorates, at the same time they should have more interest in attending regular on the job and off the job training, then only the growing information requirement of the institution and users can be met effectively and efficiently.

### Training need analysis

The need for the training have to be analyzed in a systematic way by considering requirements, task, availability of human resource, time and cost factors which could have played major role to the management.

### Finding the trainer and trainee

This is the most important part where the right trainer and trainee should have to meet at a right time and right place, so that the right objective could be reached amicably. The pre-training planning and counseling have to be done for smooth sail of the training.

**The training methodologies and coverage** Based on the findings the methodology followed is on the job training, even though it is a practical training the importance to be given to know how to install the software and the trainee should be ready to resolve the problem arise, when there is a failure of the software and system in an unforeseen circumstances, why because the availability of the experts are limited and far away from Tamilnadu universities.

### Pre-Training and Post Training effectiveness

The management may have to notice and estimate the pre and post training effectiveness and behavioral changes happened in the library so that the future need for the training would be considered. So it is important to the University top management to analyze the effectiveness and efficiency level and satisfaction level of the employee in terms of individual and general need.

### DIRECTION FOR FUTURE RESEARCH

In the light of this study the investigator bound to offer the following suggestion for the future researchers.

1. This study of SOUL Training effectiveness can be taken in a large manner covering all over Indian academic institutions with consideration of state wise and zonal wise classification of the institutions based on their structure and nature.

2. Training and development is not only for major universities and colleges, it should go to high school level so that the students from school level can also get much benefits from libraries because it is information technology world, where most of the student is computer literate.

3. Moving on the related area of the training of the other available library automation software training in the field of library so that the compared statement and finding will be available to get cost effectiveness and quality gain.

4. The further study regarding human resource management based on the training of "SOUL" in academic institution so that right sizing and right needs can be predicted.

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## 10. CONCLUSION

Pursuit of excellence in any particular technical job insists smart work rather than hard work in the same way efficiency in the automated work culture in the University Library System can be reached by perfect training and techniques imbibed and learnt through the SOUL training experienced. So library personnel need a complete, structured training in the any automation software provided in the concern library. Proper training gives technical knowledge to the workforce to find and follow right job to the right user in an efficient way and the contribution level to the parent organization directly and indirectly are definitely much higher after the automation training that given to the library personnel. The above study shows that the well planned training leads better management and service to the University Library users in terms of storage and retrieval of the relevant information predominantly at right way. Though some hesitation from the middle level staff for this kind of training initially, the end results proves that the need and necessity of the training in the large libraries for their better performances and library personnel skills up gradation in their day to day work life.

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