

# Feedback, Concept, Theories and Library Applications

Venkanna E

*Student, Master of Library and Information Science, University College of Arts & Social Science, Osmania University, Telangana, India.*

**Abstract-** *This is a position paper which discusses the concept of feedback, related theories and the application of feedback to library operations. It enumerates some specific strategies, by which feedback can be applied to library operations such as in collection development, library management/ administration, user satisfaction evaluation and the many benefits accruable from this application. It recommends the conscious adoption of feedback as a veritable evaluation strategy for libraries to enhance their performance in terms of resources and services. The paper is focused on academic libraries although its significance may have implications for other types of libraries.*

**Index Terms-** *Feedback; Concept, Theories and Library Applications*

## I. INTRODUCTION

Feedback is a phenomenon which derives from the totality of human life because it is relevant to all fields of study. Feedback occurs naturally in our daily lives as actions beget reactions and events give rise to more events. This assertion is better understood when we consider that all of human life is predicted on the acquisition and application of knowledge. This involves the generation and communication or (transmission) of information between and among human societies. Communication in this instance may be oral, sensory, written or electronic, in which a message (information) is generated from a source, carried over a channel and delivered to a receiver. The whole essence of communication is that information so generated is not only disseminated and received, but is also assimilated and applied.

Feedback is the strategy to ascertain that the end user has received the information or that he is satisfied or not. It is the process by which the receiver indicates, directly or indirectly, that the specific information or message has been received and assimilated. Thus feedback is defined as "a system, process or machine in which part of the output is returned (feedback) to the system as part of the input, in order to control or regulate the operation". Grolier Family Encyclopedia (1981). The New Webster's Dictionary of English Language (1995) defines feedback as "the return to a

system, process or device, part of its output... a response following an action, a partial return of the end products of any process to its source".

This paper discusses the concept of feedback, some related theories notable among which are the Shannon Weaver, Lasswell, and Newcomb's models of the theory of communication. It also relates the concept of feedback to specific applications in library operations such as the evaluation of library services and operations in relation to user satisfaction and general management of libraries.

## II. CONCEPTUAL FRAMEWORK

Historically, mankind has endeavored to gain knowledge about his environment with a view to imparting on it and to find solutions to his problems. This is the process of research. Research is defined by the New Standard Encyclopedia (1966) as a systematic investigation for the purpose of gaining new knowledge, to satisfy man's curiosity about his environment. Various other definitions of the term research abound such as (Udoh and Joseph 2005), (Onwudukuit 2000), (Khan and Best 1986) which cannot be accommodated for the obvious reasons of time and space. However, the point being made is that the essence of research is to gain knowledge, not as an end in itself, but as a means to an end. That is, knowledge for the purpose of application, to find solutions to given problems or to contribute to human development.

Arising from the foregoing, feedback is a concept which is concerned with ascertaining the applicability or usage of knowledge or (information) to given situations and the validity of such knowledge and by implication, the validity of the research. This means that the feedback is generated by the end user as information which is directed (feedback) to the source with a view to modify, control or improve the further generation of information. Thus information is

conceived to flow from point to point, in acyclic pattern.

This conceptualization negates the fallacy of communication as a one way traffic (a monologue) in which information is transmitted from a source to a passive receiver, and rather establishes that communication is a dialogue. (Communication 2010). Awareness is stressed that the receiver is an active contributor to the communication process. Thus the importance of feedback derives essentially from the dialogical or cyclical concept of flow of information. (Adair 1992). The imperative of this concept in the communication process is that notwithstanding that any message (information) must have a source and a receiver, the process does not end there. According to (Montagues 1991), communication is not really complete until the receiver has shown by feedback, that the message has been received and understood, otherwise the communication would be one-sided and incomplete.

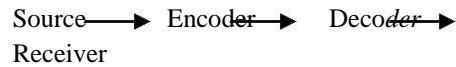
The feedback concept is as imperative for the information and communication disciplines as it is for many other areas of study. It is a fundamental concept which cuts across other established disciplines. It is concerned with man's efforts to understand, explain and guide the development of many social phenomena. In biology, the concept refers to the control of biological reaction by the end products of that reaction. The concept is similarly used in mathematics and communication, the essence of which is that output is fed back to a system or process as new input with a view to modify and improve subsequent output. (New Encyclopaedia Britannica 1997). In a sense, the saying that what goes around comes around aptly describes feedback.

It is important to note that feedback is a component or outcome of the communication theory first conceived by Claude Shannon in 1948 as a mathematical concept tailored to measure the flow of information in the electronic (telephone) system. It is this concept that has variously been modified and expanded to give rise to the information or communication theory popularly tagged the Shannon-Weaver communication or information theory. Although the concept has been progressively modified, adapted and expanded to accommodate and respond to

emerging changes in communication studies, its original concept continues to be relevant.

### III. THEORETICAL FRAMEWORK

Feedback is a component of mathematical/communication theory which was proposed in 1948 by Claude Shannon and Warren Weaver. The Shannon-Weaver theory, as it is called, was conceived as a branch of probability which measures the flow of information from source to destination. Although it was originally tailored to work with telephone networks as information channels, it has since been developed to have application in the communication process and various other disciplines including cybernetics, (the science of control and communication), control engineering, theories of learning and the physiology of the nervous system. The principal features, elements or components of the Shannon-Weaver information theory are; a source of information that is encoded, transmitted on a channel to a receiver where it is decoded. (Grolier Family Encyclopedia 1981). This concept is represented thus;



(Communication 2010)

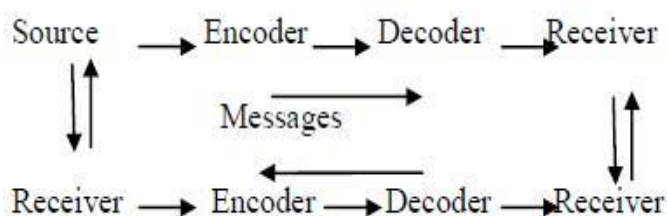
**Figure 1** The Shannon-Weaver Communication Model

However, later studies, notable among which are those of Harold Laswel, 1949, Theodore Newcombs, 1957 and Norbert Weiner, 1960 revealed that the concept of the information theory as proposed by the Shannon-Weaver model is flawed, being fundamentally concerned with conveying information across space and time, from one point to another, rather than with the results of possible influence of the message on the receiver, (Ugah 2006). The model portrays the communication process as a *one* way traffic, a monologue, involving an active sender and a passive receiver. The implication is that the model is static, negating the evidence of the cyclic flow of information in the communication process, probably due to the electronic and mathematical origin of the concept. The model does not illustrate the reciprocity which makes for effective communication.

To correct this flaw, several dynamic models were

propounded which added the concept of feedback to the model, thus providing for a closer approximation of interpersonal human interaction. (Communication 2010). Laswell's 1949 model of the information theory illustrates communication in an organized society, raising such questions as who communicates what to whom, through what channel and with what effect, thus recognizing the two way traffic in the communication process. Theodore M. Newcomb further modified the theory to produce a more fluid dimension which though not so mathematical, accommodates further interaction between the individual and his environment or in other words, between the receiver and the information received. This further interaction is what is here referred as to as feedback. Norbert Weiner's model of the communication theory permits a more flexible account of human behaviour, thereby describing cognitive, emotional and artistic aspects of communication as they occur in socio-cultural settings. It recognizes that the need for the sender to weigh or calculate the effect of the message on the receiver is pertinent for the communication to be complete and effective.

Weiner's cybernetic model of communication largely employs feedback as the aspect of communication that provides for the quality of the communication process. It portrays feedback as having the ability to condition or alter further messages. These two way models are illustrated by this diagram:



Source: (Communication 2012)

Figure 2

Here communication is depicted as a two way process because the feedback process is shown at the point between the receiver and the source. The receiver on receiving information evaluates or applies it, and feeds back information to the source on the fidelity or exactness of the information.

Therefore feedback is an aspect or component of

the communication theory which provides a process or an avenue for control, assessment or evaluation within the given setting. Feedback portrays communication as a series of actions and reactions in which interaction flourishes and allows for adequate response from the receiver back to the sender, thus providing an opportunity for the source to improve upon further generation of information for onward transmission to the receiver. The process is repeated until the receiver is satisfied. It is important at this point, to reiterate that the various modifications and more detailed versions of the communication theory derive essentially from the fundamental law discovered and propounded by Claude Shannon in 1948.

#### IV. APPLICATION OF FEEDBACK TO LIBRARY OPERATIONS

The application of feedback concept to library operations cannot be farfetched. In the present decade, library operations (resources and services) especially in academic libraries have become subject to scrutiny by stakeholders including parent bodies, management, faculty and even students. (Bertolt and Davies 2004.) Of necessity, librarians are faced with the task of evaluating the quality of services and resources they offer to their user communities with a view to establish how well they are meeting institutional goals and aims on one hand, and responding to changes in the educational process and the larger society within which they operate. As information based organizations, libraries engage in decision making activities which determine their operations. In general, these operations include the selection, management and utilization of services and resources provided to their user community. Feedback is the instrument with which librarians can ascertain user expectations in terms of adequate selection and ensure quality assurance, enhance accessibility, utilization and evaluate management procedures. According to Harrison (1976), libraries have always been concerned with their success or otherwise in meeting users' demands using such user excluded strategies as use of checklists of authors, subjects or titles, and staff generated user statistics. However, it is difficult by this method to ensure that the supposed is representative of the actual users' demands. However, feedback, through direct questioning of users in a frustration survey conducted

in Lancaster University Library enabled the library make effective changes and record measurable improvements in materials and methods.

Dwelling on the imperative of quality assurance in the management of academic libraries, (Nwosu 2007) asserts that quality control is given priority attention in every productive organization. In the library setting, the terms quality and effectiveness are used interchangeably to refer to the extent to which library services and resources meet the needs of users. The trend is that the customers' satisfaction is increasingly becoming the cardinal principle governing service industries of which the library is one. Therefore customer satisfaction in terms of services and resources is regarded as a measurement of quality or effectiveness. Perhaps customer satisfaction was the focal point of S.R Ranganathan's five laws of librarianship; (1) Books are for use, (2) Every reader, his book, (3) Every book, its reader, (4) Save the time of the reader and (5) The library is a growing organism.

To measure customer satisfaction, relevant data must be available. It would be presumptuous to operate library services based on mere guess work. It would more effective to verify them. Within the context of library operations, feedback is an effective direct evaluation strategy or technique by which such relevant data is generated, analyzed and applied with a view to improving library operations (including personnel, resources and services) and ultimately, achieving user satisfaction. Such data is required in order to identify the needs and expectations of users on one hand and the related problems of processes and service delivery. Therefore data is sourced both from users and employees. While users can provide data to indicate user's needs and expectations, employees would provide data to identify barriers to service delivery. It is important to stress that the application of feedback does not end with merely generating relevant data. Rather, it is the analysis utilization of such data would undoubtedly give rise to improved service provision and delivery.

This implies as (Ononogbo 1994) confirms, that from every service, something is always expected. In the library scenario, the expectations of the user is of paramount importance. If understood and carefully analyzed, these expectations provide the blue print that

shapes the services and operations of any library with an aim to render effective services which are aimed at meeting user's expectations. This can only be done on the basis of the analysis of data generated from the end user of the services rendered. To remain relevant and justify the cost of its operation in the midst of competing priorities, a library must be responsive and adaptive to new developments and user expectations. To quote (Ononogbo 1994)

*“A fore knowledge of taste of a customer is a guide to the manufacturer to adjust his production to suit the customer as well as make more sales and profit. Similarly, when a library service understands user's expectations, it should adjust its service to satisfy the client. Effectively, serving the user is the dream of the library profession and no risks may be too perilous to realize that dream”.*

While the assertion of Ononogbo in respect of the importance of having a fore knowledge of client's expectations and adjusting to satisfy them are acceptable, however, it need not be ‘a dream too perilous to achieve’. Instead it is a reality, which is easily achieved by the focused and conscious application of the feedback technique to generate relevant data in respect of user expectations on one hand and the extent to which they are being met by the services and resources provided by the library. Thus the generation of relevant data becomes the imperative starting point for the application of feedback in the library setting and the function of the library to solicit for and generate such information. Although cases abound where users volunteer such information (directly or indirectly) through the demands or requests they make, further demands and clarifications in the course of using the library, yet it would be most result oriented if library managers would consciously determine what areas of their operations need to be evaluated, what evaluation data are needed and what evaluation methods or procedures should be applied.

In respect of generating relevant data, this can be done through any or a combination of the following ways; reference queries, opinion polls, suggestion boxes, e-mail, formal and informal discussions, user orientation programs, graffiti, seminars and

conferences, research instruments such as questionnaires, surveys, logbook, observation, spot checks and user studies. (Chigbu 2012) carried out one such study on the availability and use of e-journals by faculty academic staff of the University of Nigeria, Nsukka. It is necessary to add that the employment of feedback through any of these methods is at very little or no extra cost. Therefore finance should not be a barrier, neither should time or expertise. Such data generation is designed, planned and executed with a view to source relevant information either from the users or staff depending on the specific information needed and the areas to be evaluated.

(Bertolt and Davis 2004) suggest that in general, three (3) aspects of library operations should be regularly and consciously evaluated.

1. **Inputs** - The investment resources of a library which include funds, personnel and facilities equipment, material (print and non-print)
2. **Services** - These are resources further generated and provided by the processing or application of the inputs. Examples are readers' services, (circulation, reference, serials) and technical services, (cataloguing, classification, indexing).
3. **Outputs** - Which are the counts or records of accumulation of the outcome of the application or use of (1) and (2). Circulation records, reference queries and responses records, records of facility usage etc are examples of outputs.

In the library setting, feedback must have methodology which would entail;

1. Generation and analysis of data - the collection and interpretation of relevant data through the techniques highlighted above.
2. Dissemination or transmission of information - the result(s) of data analysis would be of limited or no value if it is not made known to those concerned.
3. Action/implementation - feedback is

completed when action is taken or change is implemented, arising from the information derived from data collected and analyzed.

Essentially, in the library, feedback should be applied in two perspectives.

1. To determine the users' perception in respect of provision of services and resources provided (user centered perception) and
2. The evaluation of the quality of the services and resources in providing information (library - centered perspective).

Whichever perspective that is in focus, the objective of any feedback project in the library should be to identify and resolve gaps in all aspects of library operations and resources. Note that library operations can be summarized as the selection, management and dissemination of the services and resources provided to its users. For example, in collection development, feedback would reveal and resolve gaps and lapses between the quality and quantity of the collection in terms of information content and currency. It would also identify and define client's patterns of use in terms of accessibility and availability. It could highlight the extensiveness of resources including ICT, and other facilities with respect to efficiency of services rendered. In a nutshell, feedback expresses the users' actual perception of a library's resources and services rather than what the library perceives the users' perception to be.

## V. CONCLUSION

It is obvious, that academic libraries are central to quality research, teaching and learning and to a large extent, the quality of education. Therefore high premium is necessarily placed on the quality of services and resources provided by the library of an academic institution. One way to ascertain that a library (especially an academic library) is able to attain and retain the desired standard is by the focused and conscious adoption of feedback.

Building a culture of feedback in library operations should be a deliberate and result driven

activity which requires effort and planning. Emphasis is on the planning/design, purpose and application of the project. Feedback should not be casually or carelessly carried out. It should rather be purposefully planned and designed down to the type of data needed as well as the procedures and methods to be employed. There are always competing needs but specific areas of need must be identified and planned for.

#### RECOMMENDATIONS

As an evaluation instrument, feedback would lead to enhanced efficiency and avoidance of repetition of errors by answering questions in relation to the extent to which organizational goals are met, and users' needs satisfied. The benefits of feedback ultimately lead to and are essential for the sustained development of any library. In this vein, the paper recommends the conscious planning and designing of a feedback policy for libraries in Nigeria and in particular to academic and special libraries, bearing in mind, the nature of their users and the specific services they offer. Given the economic environment in which they operate where funds are limited and with services and resources competing for attention, it becomes imperative that library managements should seek to embrace and implement feed back as the method to ensure that the resources and services they are spending money on are not merely routine, but are empirically verifiable as to the extent to which they are meeting the recreational, information and educational needs of their users on one hand, as well as meeting the goals set out for them by their parent institutions. This would be one way to justify library budget.

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