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The development of a model for assessing the level of impact of information and library services

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Abstract

This paper describes the background to the development and application of a model of Levels of Impact of innovations in information and library services. The model is based on earlier work in the eLearning field and provides a tool for comparing the different effects of a service on individuals, either within a particular community or over time. The paper suggests that there is scope for further development and testing of the model to refine its application.

Introduction

There has been considerable interest in recent years in assessing (one hesitates to use the term 'measuring') the impact of library services. In part this interest has arisen through a recognition that much of our performance measurement (particularly the production of voluminous statistical reports) does not actually help us achieve the goal of better and more relevant services. In part it derives from the shift away from service-oriented towards customer-oriented approaches. In part it comes from government pressure to support broader policies, themselves citizen-focused, such as e-inclusion and lifelong learning.

Among librarians this interest has crystallised in a growing number of papers on the issue and is exemplified by the *SCONUL/LIRG Impact Initiative* (Payne and Conyers 2005). The current paper reports on the development of a model of Levels of Impact (LoI) and its use in a number of recent studies in the library / information service field.

Background

The Centre for Research in Library & Information Management (CERLIM) has had a long interest in the assessment of the impact of library and information services. One of the first projects carried out in the Centre (1993-95) looked at the impact on students of attempting to provide library support when they were studying at a distance from the main campus (Goodall and Brophy 1997). Subsequently we undertook a study for the Library & Information Commission on the *Value and Impact of End-User IT Services in Public Libraries* (Eve and Brophy 2001). A series of studies of JISC-funded projects and programmes followed, including the provision of evaluation support to projects in the recent Exchange for Learning (X4L) and Focus on Access to Institutional Resources (FAIR) Programmes. This last activity produced a toolkit of evaluation techniques (available at <http://www.cerlim.ac.uk/projects/efx/toolkit/index.html>). The first section of this toolkit

discusses the use of logic maps to clarify not only the processes of a project but also its intended outcomes or impacts.

At the same time we were also working with colleagues from the Centre for Studies in Advanced Learning Technologies (CSALT) at Lancaster University on the evaluation of the JISC Information Environment (IE). This introduced us to a number of models used in the eLearning community and we were able to adapt and utilise some of these in the evaluation of the IE Development Programme. During this work it became apparent that it would be extremely useful to be able to characterise different kinds of impact, since the qualitative data we were collecting suggested that there were a number of different kinds of 'impact' observable. Before describing the model subsequently developed, it is worth considering just what we mean by 'impact' and why impact assessment is so important.

What is 'impact'?

Impact can be defined in different ways, but in the context of library services it may be most helpful to think of it as any *effect* of a service, product or other 'event' on an individual or group. It

- may be positive or negative;
- may be what was intended or something entirely different;
- may result in changed
 - attitudes
 - behaviours
 - outputs (i.e. what an individual or group produces during or after interaction with the service);
- may be short or long term;
- may be critical or trivial.

It is worth exploring these issues in a little more detail. First, however, it is perhaps worth noting here that the subject is bedevilled by ambiguous use of terminology, with the terms 'outcomes' and 'impacts' often being used interchangeably. For example, the *Inspiring Learning for All* website (<http://www.inspiringlearningforall.gov.uk/>)

talks of "Tools to assess the impact of learning" on its home page, providing a link to a page which doesn't mention "impact" at all but instead offers answers to the question "What are learning outcomes?" and descriptions of "Generic Learning Outcomes". In this paper and more generally in our work we have adopted the convention of treating 'outcomes' as the more immediate effects and 'impacts' as those of the longer term.

Positive or negative?

It is natural to 'accentuate the positive' (as the Johnny Mercer/Harold Arlen song had it!) and it is noticeable that many studies focus on identifying the positive benefits which arise from a service. To give one example, the rhetoric surrounding the successful People's Network implementation at first focused almost entirely on the undoubted success of this nationwide initiative to get PCs and Internet access into every public library branch. It was only later that the dis-benefits (such as the loss of space for bookstock) started to hit the headlines, but little evidence was available on the extent of this impact. This suggests that care is needed to take a holistic view on the impact a new or changed service is having.

Intentional impact

Again, one of the common features of impact studies is that they seek to assess whether intended impacts have been achieved. At the time of writing, there is a controversy in the UK media over whether secondary schools are promoting vocational qualifications at the expense of core subjects such as English and Mathematics in order to advance in published league tables. The intention of the government in publishing these tables was clearly not to discourage literacy, but some argue that that is precisely their impact.

What is changed?

Because of the cost and time needed to conduct long-term qualitative investigations, impact studies very often rely on what people **say** about a service; what may be more important is whether – as a result of the service – they change the way they act. What may be even more important is whether as a result of the

service they are able to do something – say produce a report or an essay – which they would not have been able to do before. In other words, impact studies may focus on improved perception but it may be more important to track changed behaviours and new skills.

How long does impact last?

A question which is often neglected is whether an impact lasts over a protracted period. This is a particular issue for anyone developing new information systems since short-term impact may be overtaken by the next innovation. The challenge is to sustain a Google-like impact even when the service is no longer novel but has been integrated into workflows. Almost certainly long-term impact will only normally be achieved through constant innovation.

Why assess impact?

It is apparent from the literature that impact assessment is undertaken for a wide variety of reasons. As described in an earlier paper (Brophy, 2002) the aim of impact assessment might be:

- To influence policy makers. This could be at a variety of levels:
 - National government, as when the case is made for strengthening the role of the public library or museum in delivering on social inclusion or lifelong learning agendas;
 - Local government, where it may be necessary to show the positive impacts of cultural heritage investment on local communities, or simply to defend budgets;
 - Potential collaborators, for example in other memory institutions, educational institutions or commercial enterprises which need to be persuaded of the value to them of joining in service delivery.
- In strategic management
 - To understand better where impacts are being made (or failing to be made) so as identify areas for improvement and then plan strategically for future investment;
 - To check whether past decisions are having the anticipated results - and to adjust plans and planning processes accordingly.

- In operational management
 - To develop understanding of how the balance of service investments might be adjusted to increase impact;
 - To develop insights into the different responses and needs of different user groups;
 - To provide comparative data with which to monitor the effect of changes in the service mix.

Clearly, the approach which is taken to impact assessment should reflect the purpose for which the information is needed. Furthermore the significance of different kinds of impact will differ depending on the focus of interest.

Modelling impact?

In the studies outlined earlier the need was identified for a model which would enable changes in impact to be assessed over time. Although the implementation of this model has so far been limited to these studies, we believe that it has potential for further work in this area in the future.

A starting point for developing this model was work in evaluating learning using what has become known as the Concerns Based Adoption Model (CBAM). Originating with work in teacher education in the 1960s and 1970s (Fuller 1969; Hall, Loucks et al. 1975), CBAM is mainly concerned with the adoption of innovations, although it can be applied more widely, and provides foci on Stages of Concern (SoC) and Levels of Use (LoU). SoC is concerned with the ways in which participants in, say, a new project or innovative way of working, respond to the challenge of engagement. Some ‘participants’, for example, may be totally unaware of what is going on, others may show interest but no change in behaviour while yet others may change their whole way of working (see Bonamy, Charlier et al., 2004, for an example of the model applied to eLearning innovation and development). LoU suggests that instead of regarding stakeholders as users or non-users it is more helpful to think in terms of different levels of engagement – so, for example, one ‘non-user’

may have decided to have nothing to do with the innovation while another may be actively preparing to make use of it.

The original application of this model in our work was in a part of the EDNER project (described above – see <http://www.cerlim.ac.uk/edner/welcome.html>) led by our project partners at Lancaster University (Kemp and Goodyear 2003). We drew on their experience in evaluating learning technology applications and realised that the model had much to commend it in the area of information service innovation, and especially in relation to distributed electronic services with widely dispersed potential user populations. Subsequently, we have been able to develop the model to differentiate between different levels of impact in a number of different studies.

Levels of impact

In the EDNER work, there were a number of studies which were seeking to determine how much impact different projects were achieving amongst the higher and further education communities. We interviewed a wide range of academic staff in different institutions. For example, when asked about the impact of Internet access from home or office (or on the move) typical comments were (Brophy, Fisher et al., 2004):

“The amount of information is both an advantage and a disadvantage. You can find some wonderful stuff, but have to wade through lots and lots to find it.”

“Instant information on anything I need, and also the fact that I can download it and therefore use it in class directly...”

“I use the internet because I’m lazy (laughs), because I don’t want to have to get up and go to the library and you know if you find the article on the internet you can just print it straight off instead of having to search through journal issues and photocopy them.”

“I can search in my underwear!”

Clearly all these are impacts, but equally they show significant differences. Although we were able to group similar comments, and thus produce some quantified data, this did not in itself allow us to characterise impact as a process. More work on levels of impact was needed.

In work undertaken during the early stages of the People’s Network implementation, there was similarly a need to consider how impacts might best be assessed and characterised. This was a typical example of a large implementation which would impact on many different stakeholders, but where their reactions and behaviours would undoubtedly differ markedly. In a paper commissioned for the PN website (Brophy 2002) the author had suggested that it would be helpful to think in terms of the LoI model. This has subsequently been developed to that shown in Table 1 below:

-2	<i>Hostility</i>	A user may be so disappointed with the service that he or she decides that it is a total waste of money. Perhaps the result is a letter of condemnation to an influential third party such as a councillor or senior manager.
-1	<i>Dismissive</i>	The user is not actively hostile, but simply feels that the service is not worthwhile. It is a waste of personal effort to get involved, even if no attempt is made to undermine the service. There is a barrier to future engagement.
0	<i>None</i>	The user has neither positive nor negative feelings or views about the service. It is almost as if it didn’t exist.

1	<i>Awareness raised</i>	Here the service has just about had a positive impact, but simply in terms of the user being made aware of something which he/she was not aware of before. They know the service exists, do not dismiss it out of hand and might turn to it in the future if they feel a need. They might also mention, or possibly even recommend, it positively to friends and colleagues.
2	<i>Better informed</i>	As a result of coming into contact with the service the user has better information than before. This information may have been memorised or recorded for future use and is clearly of relevance.
3	<i>Improved knowledge</i>	The information obtained has been considered and the user is now more knowledgeable about the subject. This level equates to the lowest level of learning impact.
4	<i>Changed perception and/or ability</i>	The knowledge gained has resulted in a change to the way that the user looks at a subject. Real learning has taken place and/or a new skill has been acquired.
5	<i>Changed world view</i>	Here the user has been transformed by the service. His or her view of the world has shifted significantly, and constructive learning has taken place which will have long term effects. Transferable skills have been acquired.
6	<i>Changed action</i>	The new world view has led to the user acting in a way he or she would not have done before. Learning has turned into action, so that the encounter with the service has changed not just that user, but - in some way - the broader world.

Table 1: Levels of Impact (LoI) model

The Levels of Impact approach proved helpful in subsequent initial evaluations of the People's Network (Brophy, 2003; Brophy, 2004) where it informed analysis of qualitative data collected by local authority staff, in particular the analysis of comments from users. These were small-scale studies and relied on data contributed by local authorities' own staff. However, while undoubtedly 'accentuating the positive', some of the comments made by users clearly indicated that some people at least had been impacted to at least LoI level 4. For example:

He had no idea how to operate a computer and he was clutching a piece of paper with email addresses on it. It transpired that he had been born in 1911, he had been away for 3 days and wanted to send an email to his grand-daughter to let her know of his whereabouts. Needless to say he required a great deal of assistance in setting up a Hotmail account so that he could receive replies from her at the library. He had no idea how to operate the mouse and needed help with suggestions for passwords etc., but he

was a willing learner and amazingly patient and accepting of this new technology which enabled him to communicate with his relatives.(Brophy 2003)

Phil worked for several years as a country park ranger. His job mainly involved manual work but he wanted to progress into managing a park himself. He realised that he would need computer skills in order to develop his employment potential and decided to take the first step by attending the taster sessions at Wellingborough library. Phil attended Introduction to Computers and Introduction to the Internet sessions. He has since got a job as the manager of a heritage site in Essex. (Brophy 2004)

The LoI model was also used in unpublished evaluations of the British Council's proactive information services and of their Knowledge and Learning Centres Programme, a worldwide initiative to upgrade the information and related services (Clarke 2002).

When CERLIM was asked to lead a strand of work on impact within the European Commission funded Calimera (Cultural Applications: Local Institutions Mediating Electronic Resource Access) project (<http://www.calimera.org>) it was natural to use the Levels of Impact approach as a starting point for assisting local cultural institutions to assess the impact of new services. Calimera had partners in over 40 countries and focused entirely on the local level (i.e. not national or regional cultural institutions). Investigation of practice within the countries represented led to the conclusion that “In many domains and countries there is a discernible development of practice in collecting evidence to support management and policy making and some of this evidence begins to address outcomes. However, except in rare instances, this has not extended as far as impact assessment and is in any case quite limited.” (MDR Partners, 2005). A specific recommendation was made that “Action is needed to create a robust descriptive and conceptual frameworks for measuring impact, with the aim of improving knowledge and the take up of good practice, since without these the interactions between service components and user activities remain unclear.” (op. cit.). The LoI approach was well received by Calimera project partners but it was clear that it still requires further development.

Conclusion

Experience with a number of evaluation projects has shown that it is helpful to use a model of different levels of impact which enables comparisons to be made between individuals in the target community and impacts achieved over time. The LoI Model presented in this paper has proved helpful in this regard, although there remains a need to develop and test it further.

There also remain a number of issues to be resolved:

- the LoI approach has not yet been tested in longitudinal studies which are designed to gauge how individuals move through different levels. Although CERLIM was responsible for the recent Longitude II

Toolkit (Craven and Brophy, 2004) the LoI model was not sufficiently developed and established to be built into that work. This would remain a possibility for the future;

- it is not clear whether this kind of approach works well with broad service evaluation rather than studies of individual projects and products. Again, further work is needed to establish this;
- for libraries, there are difficulties in isolating the impact of their services from the broader environment, since users are always engaged with a wide variety of environments and services. However, by shifting the focus to changed behaviours the LoI model may be helpful in isolating particularly significant interactions.

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