Measuring the Impact of Libraries

Lars Egeland

Oslo and Akershus University of Applied Sciences
Abstract of paper for the 38th Annual IATUL Conference

Measuring the impact of libraries

In 2016, our university was asked to provide input to the Norwegian Ministry of Education and Research’s white paper on quality in higher education. At a meeting with the pro-rector for education, who is my boss, I said that we should also highlight the importance of the libraries.

She answered that it is good to have libraries, but do they actually contribute to the quality of education? If so, how?

Of course the libraries contribute to improving the quality of education, I said, there are many surveys documenting the fact. I’ll get back to that, I said!

My boss doesn’t have a negative attitude to libraries, which she considers to be a good thing, but she doesn’t know enough about what contributions a library can make to education and research. Nor do I, for that matter. We lack documentation. Documentation is a crucial factor in an age when many institutions can no longer afford to spend money on things that are nice to have, but have to prioritise things that pay off in terms of the number of credits produced.

I went back to my office, where, being the good librarian I am, I immediately started to search for quality-assured articles and surveys on libraries’ impact on quality of education. I found quite a few articles, some openly accessible, but most I found because the library had paid for access.

The development of user-friendly search systems means that many users are happy to find information without using library resources or staff. Has Google made the library redundant? Searching via Google Scholar had also given me access to many sources that are not open access material, because Google Scholar knows that I belong to Oslo and Akershus College of Applied Sciences.

At HiOA we have used ‘smiley machines’, which many of you will recognise from airport security checkpoints. They allow users to express their level of satisfaction with today’s visit to the library at the push of a button. Our satisfaction rate was close to 95%. That figure did not tell us very much. There was more to learn from the dissatisfied users, who turned out to be our users at closing time, meaning users who were asked to leave the library. As a result of this feedback we have introduced extended opening hours with video surveillance and access control that allow people to use the library even after the staff have left for the day.

A comprehensive survey is carried out annually among all students in Norway to rank their satisfaction with different aspects of their study situation. In this year’s Studiebarometer survey, the library at HiOA scored slightly below average for libraries in
higher education. It was interesting to note that this was due to low scores from students at a campus where there is no library.

The long-term benefits society reaps from libraries cannot be measured in terms of their popularity among users. More concrete results are needed.

We have some figures: We have visitor counters at our libraries, and they show that out of about 20,000 students and 2,000 staff at HiOA, approximately 3,300 people visit one of our four libraries each day. We know how many times our digital articles and ebooks are borrowed and downloaded. We know how many people receive academic skills training from the library. What we lack is first and foremost data on the impact of libraries.

**What is it that we want to measure?** That will to a certain extent depend on the individual institution’s own goals. The heads of institutions will be concerned with grades, drop-out rates, and completion times. At the same time, we will be interested in how well prepared our students are for employment after completing their studies and what sort of careers our students go on to have. Skills such as being able to acquire information and cooperate with others are important in the workplace. Libraries can play an important part in ensuring that students have such skills.

Factors underlying the grades and completion figures imply that students must master a set of academic skills such as taking a critical approach and being able to acquire information and use it in a satisfactory manner. This has been one of the libraries’ primary tasks in the field of higher education. There is ongoing debate about to what extent grades actually measure student learning. To what extent is it possible to measure whether libraries contribute to their learning? There will be significant variation between libraries in this respect, just as there is great variation between institutions and subjects in terms of whether the teaching methods used are student-active or teacher-centred.

So, there are plenty of pitfalls for anyone who wants to prove that the use of libraries is an effective means of helping institutions to achieve their goals. There is no shortage of research. Many surveys from the 1960s and 1970s show a positive correlation between students’ grades and whether they have borrowed books from the library. Since the arrival of the internet, this is no longer sufficient.

**Measurements** and evaluations can be divided into three areas:

- **The libraries’ contribution to learning**: Throughflow, grades, drop-out rate, the feeling of learning and achieving skills and academic values, and the libraries' contribution to improving lecturers' teaching and making it more up to date.
- **The libraries’ contribution to research**: Increased researcher productivity by providing quick access to sources of knowledge.
- **The libraries’ contribution to the institution's reputation**: As an academic symbol of the institution that contributes to better student and staff recruitment.

In 2009, the American organisation Association for College and Research Libraries launched a project to examine the value of academic libraries (the Value of Academic Libraries initiative, Oakleaf 2011). The project resulted in a comprehensive report published in 2010 (Oakleaf 2010).
The purpose of the report is to encourage library managers to introduce measurement methods to document the libraries’ value to decision-makers in the field of higher education. The book contains an overview of qualitative and quantitative literature, methods and best practice, including a review of existing surveys.

A library measurement primer. Joseph R Matthews has written several books on library user surveys. In his book *Library assessment in higher education*, which was published in a second edition in 2015, after ACRL’s report, he provides a broad overview of tools that can be used to measure the effect of library use and a review of examples. He points out that libraries have focused too much on traditional service measurement in their evaluations, while he believes that it is necessary to measure the effects that the institution and society seek. (Matthews, 2015)

Re-conceptualisation of libraries. Research on the value of libraries must take the students, researchers and institution owners as their point of departure. Librarians are not an important target group. Value measurement is closely related to a re-conceptualisation of the library. Although the library is often hailed as the institution's heart, what many people actually think is that it is a too expensive warehouse of books that is little used. The library is considered an infrastructure or support organisation. Libraries have not succeeded in explaining to the outside world that they have transformed into active academic learning and research organisations.

Library use and grades. A study was conducted among 30,000 undergraduate students at the University of Minnesota. Data were collected through automatic registration of students who logged on to the library's databases, borrowed books, ordered interlibrary loans or used the library’s computers. In addition, lists were compiled of participants at workshops, information competence courses integrated into subject studies and continuous guidance. The study found that 71.3% of first-year students had used one or more library services. Library users were compared with non-users and controlled for several demographic characteristics, such as gender, ethnicity, international status, whether the students had received a grant, whether they were the first generation in their family in academic education or had military veteran status. The conclusion was as follows:

‘This study provides evidence for the importance of libraries in first-year students’ academic achievement and retention: first-year students who used libraries in their first semester had higher grade point averages and retention when controlling for additional factors.’ (Soria, 2014)

The study showed a drop-out rate of 2.9% for students who had used the library at least once, compared with 4.3% for students who did not use the library. Students were 1.54 times more likely to start their third semester if they had used the library during their first year of studies. (Matthews, 2015)

Wollongong University, Hope College and Stamford University have examined the link between use of library databases and student grades, and found a positive correlation. (Matthews, 2015)

A study carried out at the University of Maryland (Mallincrodt 2009) examined factors that influence the study completion rate. The following factors were identified as the most important in preventing student drop-out:
That students participate in social activities on campus
- Using the library to study
- Using the library for research
- Number of hours per week spent in the library
- That students eat in a student cafeteria
- Work as a student mentor

The conclusion was that the only academic measure that increased study completion was use of the university library. The reason why teaching activities are not included on the list is probably that it is assumed that most students participate in these activities. However, it is interesting to note that academic supervision by lecturers is not included. For black students, the library was the most important factor, together with sports and outdoor recreation.

Return of investment (ROI). What is the value of the money allocated to libraries? This is a method where users are asked how much they are willing to pay for a service and the answers are compared with the actual cost of the service. Such surveys carried out for public libraries sometimes show a return of several times the funds allocated. There are some methodological problems, however. For example, university and university college sector employees are willing to pay six times as much for a service if the institution pays compared with if they had to pay for the service themselves. For students, the problem is often that it is difficult for them to set a price on the value of information that they do not possess.

At Cornell University, the value of the library’s services was calculated to just over USD 90 million in 2008/2009. Oviatt Library at California State University arrived at a figure of USD 32 million in 2008, a sum that far exceeds the libraries' budgets. (Oakleaf 2010, p. 49). Calculating the value of the library services as a whole is a demanding and often not particularly useful exercise. It is far easier to calculate the value of individual services, for example access to digital sources of knowledge. This has been done at several institutions by asking academic staff what they would have done if they had not had access to the last article they read through the library. It was found that the libraries’ digital services saved money as well as academic staff, and gave a return of investment of NOK 3–5 per krone invested. (Oakleaf 2010, p. 50)

Learning analysis in Norway. A member of our staff was the Norwegian representative in what was known as the LACE Project. This project has now been concluded. LACE stands for Learning Analytics Community Exchange, and was an EU project under the 7th Framework Programme. Learning analytics are ‘the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimising learning and the environments in which it occurs’. It is about using data from LMS systems, other internet use, student administration systems etc. to improve learning. Using big data to improve learning.

Norwegian academic libraries have had a common DOS-based library system for 40 years. It started out as a mouse, but developed into an elephant that became a dinosaur. A dinosaur cannot be replaced gradually. The upshot of the story was that all Norwegian academic libraries introduced Ex Libris’ system Alma in 2016. The introduction of Alma has given the libraries untested opportunities to gain new knowledge about their users. At HiOA’s Learning centre/Library, we see that we need hard facts. We spend millions on database access, but we know little about who uses the databases: How much do students use them? Can we link usage data to the student administration system and...
find out whether database use has an effect on students’ grades? How much are they used by researchers? Is there a link between the number of downloads and researchers’ publications? These are things we would like to take a closer look at.

We have carried out two surveys to meet our need for more detailed data on library use. One was what is known as a traffic count, the other a quantitative questionnaire survey.

Librarians have, in general, very little systematic information about activities inside their libraries. Track The Traffic (TTT) is a cheap and simple method to gather such data. It gives a good numerical picture of how library users actually use the various parts of the library.

TTT reveals both the quality – or the kinds of activity – and the quantity of use. Combined with data on the number of visitors it will also indicate the average length of stay. The method is develop by Tord Høivik at our university.

TTT is based on regular ‘tours of observation’ through the public areas of the library, normally once an hour, during one or two weekly cycles. Data gathering and analysis can be carried out by the library’s own staff rather than by hired observers and consultants.

In our library we conducted one traffic count in 2012 and one in 2016, each lasting for two weeks.

The results showed that 58% sit alone in the library, 42% work in groups. 72% used their own laptop alone or in groups. Although every student in Norway is now required to have their own laptop, 20% of the users in the library worked on a library computer.

Anne Berit Gregersen and Gry Moxnes will present this study in greater detail in their talk at the conference and describe how it provided input to modification of our library premises.

The quantitative survey was carried out in November last year. The person responsible for the survey was Mari Kannelønning, who is present at the conference and can answer questions from people who would like further details. An e-mail link was sent to 20,460 students. The response rate was 3.8% – not high, but sufficient to make it representative. The proportion of female respondents was slightly higher than the proportion of women in the student body. We also received, not unexpectedly, slightly more responses from students of library science in relation to their proportion of the student body. Otherwise, the responses were distributed in accordance with the number of students in terms of faculty and which library the students belonged to.

The survey showed that 80% of students use the physical library on a daily, weekly or monthly basis. This tallies with the visitor figures. As many as 70% stated that they came to borrow books, 64% came to work alone in the library and 45% came to work together with others. The number of students who borrow books was surprisingly high, but it would appear that everyone comes to the library to work. This corresponds to other figures that show that we have a small collection of printed books that we are constantly reducing to make room for more student workspaces, but our lending figures remain high compared to other libraries. The most surprising finding was that one in four students say that they come to ask the librarians something, and 10% say that they come for guidance. My interpretation of these figures is that the workspaces draw students to the library, that the library is where students prefer to work. The fact that they prefer to work in the library also means that they borrow books, and perhaps read more, that spaces adapted for group and individual work is important, and that it may be expedient to locate student workspaces in the library where personnel are available to provide assistance and guidance, which many students make use of.
Many of the free text responses are that the workspace capacity is insufficient, that it is cold, that power outlets are needed at the desks etc.

The reason stated by most of the 20% of students who do not use the library premises is that they prefer to study elsewhere, for example at home. Few state that they are dissatisfied with the library.

Nearly 80% say that they use the online library. Only half the users say that they search for digital books or articles in the database, while 82% say that the use the library’s OPAC to find books. The Oria OPAC from Alma has now integrated books and electronic resources into the same search. This has led to a strong increase in electronic downloads that it would otherwise have been difficult to achieve.

Not all the responses provide the immediate truth; some interpretation is required. Students say that they do not find it difficult to use the digital library. Those who find it most difficult are those whose study programmes set coursework requirements that make them most dependent on using the digital library. I assume that they give the most truthful answers.

Of the 20% who do not use the digital library, one third find it difficult to navigate, without them otherwise stating that they find what they need. This is an important argument for making the library more visible on the university website.

We have now gathered some data about library use that show that students use the library a lot. However, we are no closer to determining whether library use contributes to improving the quality of education. We need more qualitative studies to determine that, and quantitative comparisons between students’ log-on and their academic results. This information is protected under Norwegian privacy protection legislation, but can be made available for research purposes.

Mari has started conducting qualitative interviews with researchers, and we will follow this up with a questionnaire survey among employees.

What have we achieved by focusing on measuring the effect of libraries?

We know a little more about our users, but we need to find out more. We have received input on the design of the digital library, and not least on how to adapt our premises to serve as flexible workspaces for students, and we have data showing that the library as a workspace is the basis for students’ support and use of the library.

We use these figures in our internal and external marketing of the library, for example in the short annual report we have prepared that is available here.

White papers are often full of praise for libraries, for example that the library is the heart of the university, but are short on concrete tasks for the library. The white paper on quality of education that was published this winter did not even contain such praise. The libraries were not mentioned at all. We managed to create a scandal out of this fact, and the minister had to apologise.

But the most important thing was that we have largely shown that the libraries are the answer to the challenges described in the white paper: Increased digitalisation results in a growing
need for source criticism, which is the library’s core area of expertise. Research-based education requires access to sources of knowledge, which the library provides. Digitalisation does not eliminate the need to meet other people in person. Good and flexible student workspaces are needed so that students can work together. The library is the most expedient location for such workspaces. The library is the digital era’s arena for cooperation.

We were invited to a hearing in the Norwegian parliament, and the standing committee's spokesperson on the matter asked us to draft a comment for the standing committee. What looked like defeat was turned into a small victory. We cannot take all the credit for it, but a new white paper on the humanities in Norway was published a few months later, and it contains a whole chapter on libraries and another on publishing and open access.

References:

- Norge. I St.meld. nr. 40 (1990-91) Fra visjon til virke. Om høgre utdanning.

Biography:
Lars Egeland, Director for Library and Learning Center at Oslo and Akershus University of Applied Sciences.
Vice-President of the Norwegian Library Association
Former Member of Parliament in Norway.
Former Director of the Information Department at the Norwegian Authority for Archive, Library and Museums.