

## **Students' preferences for print vs electronic study literature – next step after the survey in Norway**

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**Abstract:** Five Universities and Colleges in the Western part of Norway participated in the international survey of students' preferences for print vs electronic study literature (Mizrachu et al, 2016). The national results were disseminated (Gastinger, Landøy, Repanovici 2015). In this paper, we describe the follow-up process after the initial survey results: Staff from the participating academic libraries were invited to a "training the trainers"-session in how to develop educational resources on electronic study literature for students. A number of academic librarians participated. We ask what the results in their own institutions have been so far, and how the teaching librarians have coped. The results of the follow-up survey will form the basis for further research and development.

**Key words:** Study literature format, Norway, Academic libraries,

### **1. Introduction and Background**

Norwegian academic libraries are to a large degree subscribing to scholarly journals in electronic format. The journals in electronic format has been around for a couple of decades, and libraries have, more or less, weeded their journal shelves and adapted to the changed reality. This includes facing the situation of no longer being the guardians of knowledge but instead developing a role of guides in the knowledge and information overload, through setting up different kinds of information literacy training activities.

Lately, the emergence of electronic books have raised new questions among libraries and their patrons on how to help users, especially the students, best exploit the benefits of electronic books: 24/7 accessibility from everywhere with an internet connection, the environmentally friendliness of not cutting down trees to make paper, and the pleasure of not having to carry books.

Norwegian students in higher education are grown up in a digital environment, with a high rate of computer and smart-phone ownership and usage. In most

high-schools, the use of a laptop is now compulsory, and the students come to universities with good skills in writing on laptops. (Their skills in information literate searches may be lacking, but that is not the topic for this paper). It could therefore be assumed that the students would prefer reading their study literature online rather than in print.

However, the ARFIS (Academic Reading Format International Study) project led by Diane Mizrachi, and others, have investigated the students' preferences for print vs electronic study literature by an international set of surveys for several years (Mizrachi 2015, Mizrachi 2016, Mizrachi et al 2018) The results are quite similar: students across many countries prefer the printed versions of study literature. Mainly, they give "ease of use for notetaking and highlighting", "more comfortable on the eyes" and "more familiar" as reasons for preference for printed literature.

"The findings point to broad consistency across countries in terms of favorability towards print for academic reading This international consistency is more apparent in some individual scale item responses than in others. (...) In total, 72.37% of respondents agree or strongly agree that they remember information best from print sources, and 82.02% agree or strongly agree that they focus best with printed material" Mizrachi et al 2018:12.

The ARFIS questionnaire is in two parts: First, 16 statements about students' preferences for reading formats and factors that influence their preferences and behaviours. A five-point Likert scale was used for possible answers, ranging from "strongly disagree" to "strongly agree". Each of the 16 questions/statements provides space for comments. In addition, the first part contains one question about devices that are used for electronic course readings. Students could tick off multiple answers to this question. Second: six questions or statements gathering demographic information, like age, current study status (i.e. first year, third year, PhD), and discipline major or field of study. Additionally, a final open-ended question asks for any other comments on academic reading format preferences.

In April 2015 the Norwegian part of the ARFIS was launched, surveying undergraduate, graduate and postgraduate students of various subjects at different universities and university colleges in Norway (University of Bergen, University of Stavanger, Norwegian University of Science and Technology, Bergen University College, Sogndal University College and Stord/Haugesund University College).

The original survey was made in English, and the Norwegian project team decided to use the English version. The dissemination of the URL to the survey was carried out by email. Participating colleagues from the libraries sent explanatory text and the link to the questionnaire to students from the

Norwegian institutions mentioned above. 1063 responses were assembled. The gathered data were then entered, coded, and analysed using the SPSS statistical package.

Findings from the study confirms that Norwegian students, like their international fellows, prefer printed to electronic study literature. Altogether 70 % of the students agreed (37 %) or strongly agreed (33 %) with the statement: “I prefer to have all my course materials in print format (e.g. book, course reader, handouts)”, and 75 % disagreed (41 %) or strongly disagreed (34 %) with the statement “I prefer to read my course readings electronically” (Gastinger, Landøy, Repanovici 2015).

Inspired by the findings which were informally reported at the Norwegian University of Science and Technology (NTNU) Library, Trondheim, the branch library for medicine and health set up a survey of their own students, with somewhat similar questions. The authors of that study also added focus groups and interviews with academic staff. Among the students, they found:

- Preferences for print format for texts longer than seven pages (75 % of student respondents agreed or partly agreed, N=130)
- Students of medicine use print books as study literature (55 %)
- Almost 60 % of the students usually highlight or make notes in the printed study material, but more than 70 % did not know about the corresponding features for e-books
- When asked about what would be needed to use e-books as study material to a higher degree, 42 % of the students indicated “more knowledge” about how to use e-books and 44 % wanted “better platforms”. However, 12 % of the students replied that they do not want to use e-books.

When asked whether the library should prioritise printed or electronic books, the majority of students wanted the library to cut purchasing printed books, and rather maintain the supply of e-books. In the comments section, students mentioned the advantages of electronic literature, mainly their availability 24/7, and their ease of access. One student mentioned that s/he looked at the library e-books in order to evaluate which printed books s/he would buy personally (Aronsen, Johansen, Rein, 2017)

There have also been earlier investigations of students’ reading preferences in Norway. In 2013, University of Agder Library did a study where they provided 74 students in the Humanities and Social Sciences with e-readers (Kindle and iPad) preloaded with course materials. The most interesting finding for our purpose was that a total of 79% of the students thought the e-reader was good or very good for reading journal articles. A little less, 61%, had a similar opinion related to reading books. Despite a high degree of satisfaction with the e-

readers, much fewer students thought they would solely relying on such a device. When having been given the opportunity to read literature from the reading list on an e-reader, 54% of the students replied that they still preferred to read print books. Only 11% would rely solely on an e-reader device, and 28% found that a combination of print books and online material on e-readers was best for study purposes. Seven percent answered that they did not know what kind of format they preferred books to be in (Olsen., Kleivset, Langseth 2013)

In an ongoing study surveying 256 first year students of Social Sciences at the University of Bergen, one of the authors found that preferences are similar to the ones from other studies. However, one interesting finding is that 70 % of the students indicate that they would like to participate in a library training about more efficient use of electronic books, if such training was offered.

## 2. Implications for training students

Gastinger, Landøy and Repanovici presented results at ECIL2015. The Norwegian results were compared with data from the Romanian part of the ARFIS study. In that paper it was suggested, based on data from another Romanian study, that perhaps one of the reasons for preferring paper material was the familiarity with highlighting and annotating. (Gastinger, Landøy, Repanovici, 2015). This is supported when looking more closely at the data from the survey, especially on the preferences according to the level of students. The younger students (first and second year) agree more with the statements about preferences for printed material and disagree more with statements about preferences for electronic study literature than students at master's level.

**Table 1: Students' agreement or disagreement with the statement "I remember information from my course readings best when I read them from printed pages" cross-tabulated with level of study. Percentage.**

<i>Study level</i>	<i>Agree</i>	<i>Neither</i>	<i>Disagree</i>	<i>N=792</i>
<b>First year</b>	<b>82,1 %</b>	<b>13,6 %</b>	<b>4,3 %</b>	<b>184</b>
<b>Second year</b>	<b>72,9 %</b>	<b>17,6 %</b>	<b>9,6 %</b>	<b>188</b>
<b>Master</b>	<b>76,9 %</b>	<b>18,4 %</b>	<b>4,7 %</b>	<b>277</b>
<b>PhD</b>	<b>74,8 %</b>	<b>14,7 %</b>	<b>10,5 %</b>	<b>143</b>

**Table 2: Students' agreement or disagreement with the statement "It is more convenient to read my assigned readings electronically than to read them in print" cross-tabulated with level of study. Percentage.**

<i>Study level</i>	<i>Agree</i>	<i>Neither</i>	<i>Disagree</i>	<i>N=798</i>
<b>First year</b>	<b>21,2 %</b>	<b>16,8 %</b>	<b>62,0 %</b>	<b>184</b>
<b>Second year</b>	<b>20,1 %</b>	<b>16,3 %</b>	<b>63,6 %</b>	<b>184</b>
<b>Master</b>	<b>16,7 %</b>	<b>14,6 %</b>	<b>68,6 %</b>	<b>287</b>
<b>PhD</b>	<b>28,7 %</b>	<b>14,7 %</b>	<b>56,6 %</b>	<b>143</b>

The “ease of familiarity”-hypothesis is also supported when looking at the findings from the international survey:

“Highlighting and annotating important texts are common learning strategies that demonstrate an effort to engage with a reading for effective comprehension and retention. Among our respondents, 83.6% agreed or strongly agreed that they usually highlight and annotate their printed course readings, but only 24.11% said they did the same with electronic readings. In each case, format preference is correlated to a small degree with the use of text engagement tools in that format” Mizrachi et al 2018:13

This is yet another indication that the preference is connected to the level of knowledge and familiarity with the format.

The Western Norwegian academic libraries participating in the ASFIS- study used this indication to try an intervention. After successfully applying for funding they developed a course on “How to use electronic study literature in an efficient way”. This course was given as a day-long “training the trainers session” in Bergen in November 2016. It included practical work with several platforms for electronic books (i.e., Ebrary, ProQuest books, and Norwegian digital books from the National Library of Norway), and focused on finding and using tools for highlighting, annotating and writing comments on these platforms. Also, a suggestion for a course agenda was provided. The participating librarians could use this as a scaffold for similar trainings of students later on. The main objective of the course was to familiarise the librarians with what kind of supporting tools are available, and where to find them.

Some of the post-course evaluation comments focused on the difficulty of integrating these issues in ongoing information literacy courses, and also whether the professors and departments would give the library more teaching time. Also, the need for all staff, not only the teaching librarians, to be knowledgeable about these issues, was described. The initiative was praised, and the possibility to meet colleagues from other libraries that were struggling with the same issues.

After the training session in Bergen, the libraries planned to cascade the new knowledge to other colleagues, but unfortunately this has not happened yet, mainly because of organisational changes in the libraries and in their mother institutions. However, there are new plans for conducting these courses at all universities/colleges in Western Norway. The plans include a cascading effort for the entire library staff, through formal and informal training sessions, with a newly developed 45 minute course for teaching librarians. The training for librarians will be divided: Librarians in the “front-line” will be trained in responding to rather simple questions arriving on chat or at the circulation desk. The academic librarians will acquire deeper knowledge of the tools and

functions, to be able to teach and fully support students. Some of the teaching librarians are already adding “How to apply extra features when reading e-books” in their ordinary information literacy courses, thus providing a subject-specific training, focusing on the main e-book platform(s) for a specific group of students.

In addition, the University of Bergen Library has developed a training webpage, including both general information on electronic books, a pdf with “how to”, and a short video with examples of annotating and high-lighting.

### **3. Summary and Conclusions**

The international research on students’ preferences for printed vs electronic study literature showed that Norwegian students have the same preferences for printed material as students in many other countries. However, there are some indications that there are more complex mechanisms. These indications lead us to the assumption that one reason for the preference for print over electronic study material is about the preference for a well-known format, or rather the lack of knowledge of online supporting tools. The obvious conclusion was to expand existing information literacy programmes by teaching special features of e-book platforms, like highlighting and annotating.

While physical libraries are repositories of printed books and journals, they are also, as Watson and Little argue, learning spaces, providing students with much-needed areas for quiet studying and academic collaboration (Watson 2014, Little 2013, Little 2014). There is always a need for more study and social spaces in the library, and “weeding” in the stacks in order to reduce the number of shelves can be one simple way of meeting this demand.

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