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How to Explore Trends and Challenges for Building Future Libraries

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Libraries need to use several different methods when determining the needs and wishes of students and academic patrons for future academic libraries and documentation centers. In this paper, the authors report findings from a survey in Romania and interviews in Norway, on what innovative issues students are imagining in future libraries. Among the trends students and academics are foreseeing are found green libraries, including green information literacy, bibliometrics/scientometrics, library as "home", makerspace (3D-printing) and libraries as centers for documentation, for academic writing and for other necessary skills.

Keywords: *academic libraries and documentation centres; library of the future; library users; surveys; interviews; Romania; Norway*

1. Introduction

Library planning and library development requires among other things the ability to acquire and sort input from stakeholders. In academic libraries the academic staff and the university leadership are certain stakeholders, but maybe even more relevant are the students. One of the issues with gathering input from students is how to get the most relevant information.

In this paper, the authors will pin-point some considerations that need to be done when deciding how to find students opinions. The actual issue is concentrated around students' needs and wishes from the university library. After some theoretical and methodological remarks, we will show in practice how we used two different methods to ask students in our locations: *Transilvania* University of Brasov, Romania, and University of Bergen Library, Norway.

Our starting point is that determining needs and wishes probably requires the use of several different methods. We wanted to take into consideration the needs from students for future academic libraries and documentation centres as they see it themselves, and we wondered what innovative issues students can imagine in future academic libraries.

As Connaway and Radford (2017 p. 30) puts it: "[...] researchers find it necessary to employ a variety of specific methodologies [...]".

From the literature (Matthews and Ross 2010; Grønmo 2017; Gran 2012) both interviews and surveys are good tools for exploring trends and challenges, and a combination of both tools is even better. We also knew from our experiences (Repanovici and Landøy 2007, 2014) that comparisons and benchmarking will yield an extra layer of information, essential for work with developing libraries. However, there were practical limitations to the implementation of a survey in the University of Bergen library, so we decided to try out a survey as method in Brasov, and

interviews in Bergen. This is why we did not employ both survey and interview in both locations.

2. Methodology

Matthews and Ross (2010), in *Research methods. A practical guide for the social sciences* distinguishes between the qualitative and quantitative approaches to finding and using data. There are several practical and theoretical differences between qualitative and quantitative approaches, but their main message is that the usage of method will depend on what kind of question is to be investigated; what subject is under scrutiny. Matthews and Ross are in favour of "mixed methods", where data gathered by one approach is used to augment data gathered by the other approach.

Similarily, Grønmo (2004 p. 128f) distinguishes between qualitative and quantitative data. Qualitative data has analytically descriptive research questions, while quantitative data replies to statistically generalising research questions. "Flexibility" is the norm for the methodological approach when using qualitative data, and "structure" for quantitative. A researcher using qualitative data will be closer and more sensitive to the data sources, while researching with quantitative data calls for distance and selectivity. When interpreting data the relevance is most important when using qualitative data, and precision when using quantitative (Grønmo 2017 p. 129).

From Matthews and Ross (2010) and Grønmo (2017) it is evident that both qualitative and quantitative approaches and methods have their advantages and disadvantages, and the main point is the planned usage.

Validity and reliability are central concepts in research, especially within quantitative surveys. Validity is defined as "the degree of applicability of the data for the research question", while reliability is defined as "trustworthiness of the data/data collection" (Grønmo 2017 p. 241f; Gran 2012 p. 42).

Validity is concerned with having the correct data in relation to the research questions, while reliability, on the other hand, is concerned with proper data collection. In practical research validity and reliability may include several different aspects:

- Are the respondents the correct ones to be asked about the issue under investigation? Do they possess the knowledge the research is looking for?
- Are the questions formulated properly, so that they elicit answers to the research questions, and not something else? Are they valid?
- Are the data collected and treated in the appropriate way? Are they reliable?
- Is there sufficient flexibility to allow for other research questions that turn up in the process, to be investigated as well? (Gran 2012 p. 42)

In our practical work with acquiring data on students' views on future academic libraries and their perceptions of their needs, we decided to try a survey in one location, and interviews in the other, as described earlier. In the background was our belief, based on Grønmo, Gran and Matthews and Ross, that surveys are good for larger amount of data that can be analyzed statistically. However, they are not very flexible, although they may include open questions, and as such gain a bit more flexibility. On the other hand, interviews are better for in-depth data collections. Interviews, however, are time consuming for the researcher, and may be very flexible. They can also allow a close interaction between interviewer and interviewee.

The two methods can be seen as complimentary, and this was one of the reasons we wanted to try both as an experiment.

2.1 Survey in Romania

As put forward by Grønmo, Gran and Matthews and Ross, surveys are well suited to gathering of large amounts of data, and to get simple, straightforward responses to questions. However, this is depending on how well thought-out the questions in the form are. In our case, we decided to ask about prospective services under three headings: The learning centre; Centre for technological transfer and Centre for documentation and use of information. Under each heading we grouped the services belonging to these aspects of the academic library, and the respondents would then rate how important they found the services on a scale from one (least) to five (most). There was also an option of "other", to open for other services that the authors had not included in the original survey, but this was used only to a small extent.

The authors collaborated on the questions in the survey, which were then translated into Romanian and administered as a web survey through survey-monkey collector to all students from the specializations Mechatronics, Optometry and Medical Engineers from Product Design and Environment Faculty at *Transilvania* University.

There were 105 students responding: 27% male, 73% female. 39% were from first year and 43% forth year. 38% were between 18-21 years, while half were 22-23 years. 12% were over 24 years.

2.2 Interviews in Norway

The Norwegian part of the investigations for this paper took place at the University of Bergen Library in the spring of 2016.

As mentioned earlier, there were practical problems hindering a deployment of a survey in Bergen, but conducting interviews as a means of gathering data and information was possible. The interviews were part of discussions held with the student unions at the faculty level for Faculty of humanities and Faculty of social sciences, and also random students in the library.

12 students from different faculties, both at bachelors- and masters' level were interviewed about what they thought the university library should contain.

In the interviews, the students were one open question: "What do you think a university library should contain?" and one question with some options, but also including an open question "anything else?" The second part of the interview consisted of their comments in the form of "yes, I would use/no, I would not use" to a list of different items that could be found in a library. The list was made from similar items in the survey in Romania. However, as several of the new trends suggested for the Romanians already are implemented in Bergen, the list was shorter. These are the items that were only in the Brasov list:

- Connection to electricity, internet connection;

- Access to the databases to which the university has a subscription;

- Online tutorials on accessing information;

- Access to software for automatically generating a bibliography;

- Copy and printing devices, scanners;

- Online documentation for downloading and using the available licenses and software;

- Online communication with a specialized support IT centre for any technological issues that may arise.

Typically, the interviewer did not comment at the responses given to the first open question, but just made notes of what was said. For the second question, there were some explanations for the terms used, but the full flexibility of the interview situation was not used. This was deliberate, to

gather the students' own impressions and not interfere from the interviewer's own point of view.

There were 5 male and 7 female students interviewed, 3 from bachelor and 9 from master level. 8 from Faculty of humanities, 3 from Social Sciences and 1 from Law, and all were users of the library. They were invited to participate in the interview, and rewarded with a coffee from the library coffee shop.

In addition to the data used in this paper, the interviews also contained other suggestions for the Library for the humanities that were implemented (or in one case not implemented) in 2016 and 2017.

3. Results

The SurveyMonkey program (and other similar software) allows for immediate and systematic presentation of results from surveys in tables or figures of different kind, typically in the form of percentages instead of actual numbers. It also lets the researcher combine responses to more than one question in the same table. This can facilitate uncovering of deeper conjunctions; if one group of students (for ex. 4th year level) are systematically more interested in one feature.

On the other hand, interview-based research will typically have quite small amounts of data, and tables will be made manually by the researcher. More often, though, the interview responses will be presented in plain text and with actual numbers instead of percentages.

Another issue when it comes to the results from two different libraries in separate countries is how to present data from each library: All results from each library together, or as comparisons on each set of questions? In this paper we decided to compare on each set of questions, as we imagine this will yield the most interesting results.

Findings

In this research we were looking for what the students saw as new and interesting trends in academic libraries, and their perceived needs and wishes, in Brasov, Romania and Bergen, Norway. In the survey the suggestions were formulated in the questions, while in the interviews there were some pre-formulated suggestions based on the same lists as the survey.

Comparisons

One set of questions concerned what we called "The learning centre" in the library.

Table 1. *Responses from students in* Transilvania *University of Brasov to the question* Which of the following facilities should be provided by the Learning Centre. Responses 1 to 5, *where 1 is "least required" and 5 is "most required"*

Which of the following facilities should be provided by the Learning Centre, on a scale from 1-5, where 1 - least, 5 - most							
Answer Options	**1**	**2**	**3**	**4**	**5**	**Rating average**	**Response count**
Furniture - tables and chairs - which can be moved	1	7	25	35	37	3,95	105
Mobile walls to create various private spaces for individual or team study	8	15	32	25	25	3,42	105
Boards, video projectors connected to laptops for video projectors connected to laptops for presentation	3	1	9	19	73	4,50	105
Connection to electricity, internet connection	1	0	4	7	93	4,82	105
Others							1
						answered question	**105**
						skipped question	**0**

The students in Brasov were asked about what facilities should be provided by the learning centre, and gave "connections to electricity, internet connection" as the most desired, followed by "boards,

video projectors connected to laptops for presentation", "furniture - tables and chairs which can be moved" and "mobile walls to create various private spaces for individual or team study" as least interesting. We can see the same order when we look at the responses with "5" or "most".

From the Bergen students we see that all 12 would use "boards, video projectors connected to laptops for presentations", and half (6) would use "furniture - tables and chairs - which can be moved" and "mobile walls to create various private spaces for individual or team study". Interestingly, internet and electricity is not mentioned, and we think that this is because it is considered fundamental by students in a Norwegian academic library.

Table 2. *Responses from students in* Transilvania *University of Brasov to the question* Which of the following facilities should be provided by the Centre for Technological Transfer? *Responses 1 to 5, where 1 is "least required" and 5 is "most required"*

Which of the following facilities should be provided by the Centre for Technological Transfer on a scale from 1 to 5, where 1 - least important, 5 - most important?							
Answer Options	**1**	**2**	**3**	**4**	**5**	**Rating average**	**Response count**
An area with 3D printers, supplies and related software	2	1	20	32	49	4,20	104
Gaming space - Lego, chess for stimulating creativity	7	17	34	29	17	3,31	104
Copy and printing devices, scanners	0	2	8	26	69	4,54	105
Laptops and mass-media technology for tomorrow	0	5	12	30	58	4,34	105
Online documentation regarding the use of the	0	4	29	35	35	3,98	103
Online documentation for downloading and using the licences that university bought access to	1	4	15	28	55	4,28	103
Online communication with a specialized support IT	1	7	12	38	46	4,16	104
Training courses for using the various technologies	0	3	15	37	50	4,28	105
Exhibitions of new products by different companies	2	6	19	32	46	4,09	105
Workshops on various topics of interest	0	4	13	26	62	4,39	105
Others							2
						answered question	**105**
						skipped question	**0**

Another set of questions dealt with the idea of a "Centre for technological transfer" in the library.

The Brasov students found "copy and printing devices, scanners" as most interesting, followed by "workshops on various topics of interest". They also would like "training courses for using the various technologies", and "online documentation for downloading and using the licences that university bought access to". "Gaming space - Lego, chess for stimulating creativity" was least interesting, and we can see in the table that this item received the most responses of "1 - least important", "2" and "3").

In the University of Bergen Library copy and printing devices with scanners are already implemented as standard equipment, and therefore was not on the list of suggestions in the interviews. However, 11 of the respondents were interested in attending "exhibitions of new products by different companies acting in the industry of our specialization". As the main group of students came from the humanities, there was certain insecurity about what this could be, and "book fair" was given as one example from the interviewer. One of the students mentioned that this had to be subject-relevant, and another said that it should not be advertising.

A majority of the Bergen students (7 of 12) agreed that "Lego, chess, GO for stimulating creativity", "photo and film cameras for borrowing" and "training courses for using the various technologies" would be of interesting. Only 25% (4 students) were interested in trying "3D printers, supplies and related software".

Other items that were mentioned in the interviews relating to this heading: Art exhibitions;

newspaper archives digitally available on a big screen; exhibiting older material and fiction; shorter practical and inspirational workshops from the professors or the library staff.

When asked about what would be the most important feature of the University library, the students from *Transilvania* University of Brasov rated "Centre for documentation and use of information" highest.

Table 3. *Responses from students at* Transilvania *University of Brasov to the question* How important are the following facilities? *Responses 1 to 5, where 1 is "least important" and 5 is "most important"*

INFORMATION COMMONS will include three centres: learning, documentation and use of information resources, and technological transfer by software and equipments. On a scale from 1 to 5, where 1 - least important, 5 - most important, how important are?							
Answer Options	**1**	**2**	**3**	**4**	**5**	**Rating aver-age**	**Response count**
Learning centre	0	4	12	33	55	4,34	104
Centre for documentation and use of information	0	0	5	28	70	4,63	103
Centre for technological transfer	0	1	14	47	42	4,25	104
Comments							2
						answered question	**105**
						skipped ques-tion	**0**

And the Norwegian students agreed. "Relevant books, journals, media, databases (both printed and electronic)" were mentioned by all 12 students, "study spaces in different kinds of zones (more or less quiet; with or without computer)" by 9 and "accommodating and knowledgeable library staff" by 8.

In the open part of the interviews, the 12 Bergen students had a wide range of requirements for the university library. The requirements differed quite significantly between the students. Half of them stated that they would take the library as they know it as their starting point, but still, there was a difference in what was mentioned.

Table 4 gives an overview of future library requirements mentioned in the interviews.

Table 4. *Future library requirements mentioned in interviews with students from University of Bergen*

Item	**Mentioned by number of students**
Relevant books, journals, media, databases (both printed and electronic)	12
Study spaces in different kinds of zones (more or less quiet; with or without computer)	9
Accommodating and knowledgeable library staff	8
Newspapers	5
Group study rooms	4
Inter Library Loan services also for students	3
Computers/printers/scanners	3
Coffee shop	3
Events (book launches, debates etc)	2
Reference works	2
Trainings and instructions	2
Water fountain	1
Chat	1
DVDs also for leisure	1

The very traditional item of "resources" was mentioned by all.

4. Conclusions

- Both interviews and surveys are good tools for exploring trends and challenges for building future libraries from the student point of view, and a combination of both tools is even better. Comparisons and bench marking will yield an extra layer of information for developing libraries. Practical limitations where the reason why we did not employ both surveys and interviews in both locations.

- Our Bergen and Brasov students are traditional and don't have a lot of imagination when it comes to suggestions for new services, but are enthusiastic when we suggest.

- There are differences in what they prefer.

- We suspect that the differences originate in different existing services in the two libraries, but it can also be caused by them studying different subjects.

Note

The paper (first published now) was presented at the 8th International Conference on Qualitative and Quantitative Methods in Libraries - QQML 2016, London.

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Information Literacy of Library Science Students at the Faculty of Philosophy, University of Sarajevo

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This paper analyses information literacy competencies of students at the Department of Comparative Literature and Library Science, Faculty of Philosophy, University of Sarajevo that offers bachelor's degree and master's degree in library science. Survey on information literacy competencies of library science students at the Department was realized by the online questionnaire for self-assessment that was developed on the basis of Permutation Model Components with the purpose to obtain insight in student's perception of their information literacy competencies, to detect to what degree students improve their information literacy competencies and confidence during studies and what possible difficulties they face in this process. This is particularly important considering that there is no separate information literacy course adopted in Departments curricula but the information literacy related content is offered and taught in different courses. Analysis expectedly reveals that in general students feel confident in their information literacy competencies, that their information literacy competencies progressively improve during their studies, but also that students consider that the introduction of a stand-alone information literacy course would greatly contribute to the simpler and faster improvement of their information literacy competencies.

Keywords: *information literacy; library science students; Faculty of Philosophy, University of Sarajevo*

1. Introduction

The existing theoretical and practical literature in information literacy expectedly emphasizes the importance of proper acquiring of information literacy competencies from different perspectives, and especially when it comes to library and information science students. Library science students as future librarians also "have to be fully aware of the importance of IL as a concept, understand its relevance in contemporary societies and have to learn about main aspects of teaching IL" (Grgić&Špiranec 2013). They have to continuously acquire information literacy competencies during their education considering that they will be the professional information mediators that will provide and teach information literacy. But when it comes to library science students, apart from acquiring these competencies, as Pinto and Pascual accentuates "two kinds of perceptions are key: belief in the importance of such competencies, and Self-Efficacy" (Pinto&Pascual 2016).

Bandura (1997) explains that self-efficacy refers to "beliefs in one's capabilities to organize and execute the courses of action required to produce given statements" and that these beliefs "determine people's feelings, thoughts, motivations and behaviours" (Bandura 1986). Considering that high and low self-efficacy beliefs may result in achieving a certain task or its failure, measuring self-efficacy across different disciplines gained researches attention, including those in library and information science and consequently in information literacy. Self-efficacy might be understood as a highly effective predictor of students' motivation and learning and as the mediator of students' academic achievement (Zimmerman 2000).

In the contemporary complex information environment, confidence, competencies and motivation play an important role in how a given task is undertaken, especially in new and challenging environments such as information retrieval systems through which heterogeneous users search and evaluate the information they need. Information-seeking and use have become challenging for university students due to the proliferation of information technologies and resources and they need strong information-seeking and use skills to accomplish their goals. While the higher education community has articulated the importance of information literacy competencies to assist students in learning to find, use and evaluate information, "low self-efficacy may be a significantly limiting factor for individuals exploring information problem-solving skills vital for lifelong learning" (Kurbanoglu 2004 p. 732).

2. Literature review

The first attempt towards designing a self-efficacy scale for information literacy was made by Kurbanoglu, Akkoyunlu and Umay (2004) who acknowledged that "attainment of high sense of self-efficacy beliefs is as important as possessing information literacy skills" and accordingly developed self-efficacy scale (ILSES) designed to measure self-efficacy for information literacy (Kurbanoglu, Akkoyunlu and Umay 2004). Similarly, by explaining that "a concept closely linked to motivation is that of self-efficacy", and that "students can become IL only if they proactively and independently choose to pursue the opportunities that are available to them during the course of their education", Pinto (2010) developed an information literacy self-assessment tool, the IL HUMASS questionnaire. Bronstein (2014) investigated the impact that the four sources of self-efficacy information (Bandura 1986) have on the self-efficacy beliefs of library and information science students, where results showed a high level of self-efficacy among LIS students. The role of information literacy self-efficacy in students' achievements has also been investigated by De Meulemeester (2013). The results of this research showed that students feel confident, but the IL test results, didn't indicate similar results (De Meulemeester 2013 p. 468).

Mentioned and other studies, reflections and discussions across different disciplines that were focused on the development of self-efficacy tools and were conducted in accordance to the Information Literacy Competency Standards for Higher Education by ACRL or other relevant standards and models, including national standards and models as well, resulted with many suggestions and contributions to these kinds of researches, but a common characteristic of different self-assessment approaches is the accentuation of the importance of information literacy as one of the essential competencies of future librarians that is inseparable from the concept of lifelong learning.

3. Problem statement

Considering that there is no separate information literacy course adopted in Department of Comparative Literature and Library Science, Faculty of Philosophy, University of Sarajevo curricula, but the information literacy-related content is distributed across curricula, the main purpose of this paper was to obtain insight in students' perception of their information literacy competencies, to detect to what degree student improve their information literacy skills during studies, what possible difficulties they face in acquiring information literacy competencies in above explained circumstances.

A survey on the information literacy competencies of library science students was realized by the online questionnaire that was created on the basis of model called Permutation Model Components (PMC). PMC model is the first and only model that was created for the purposes of information literacy implementation at the University of Sarajevo and it is "a combination of concept based

approach with elements of tools based approach" (Rašidović 2011). The model consists of four categories: 1) Content, 2) Skills, 3) Evaluation and 4) Education. Content category consists of general knowledge and knowledge from curriculum, Skills category includes elements of defining the scope and nature of the information needs, defining search strategies, searching for different information resources and redefining the search process. Evaluation category includes elements of selection, analysis and assessment, organization and synthesis of information, while Education category refers to knowledge about the use and presentation of gathered and selected information, ethical and legal principles of citation, preparation of bibliographies, knowledge about citation styles, methods and elements of quoting (Rašidović 2011).

Previous research conducted on the basis of this model at the University of Sarajevo analysed information behaviour of the students at the Faculty of Philosophy, University of Sarajevo (Dizdar, Khattab and Grebović-Lendo 2016), experiences of the actual implementation of this model at the Faculty of Criminal Justice Sciences, University of Sarajevo, including pre-testing and testing of students information literacy competencies (Rašidović 2014, 2016) but no self-assessment studies based on this model were previously realized, so the development of this questionnaire for self-assessment should be recognized as a contribution to the implementation of this model in BiH environment and foundation of its further research and improvement.

4. Research method

The statistical population of the study were 50 BA (excluding first-year) and MA library science students at the Faculty of Philosophy, University of Sarajevo. The population sample presents students enrolled in the fall semester final exams, according to Student Information System of University of Sarajevo. Survey on the information literacy competencies of library science students at the Faculty of Philosophy was realized by the questionnaire that was created in the Google Docs platform. Data was collected by an online questionnaire consisting of 30 questions divided in 3 main categories and constructed on the basis of the 5-point Likert scale (1 - disagree, 5 - strongly agree) which was distributed to all 50 BA (excluding first-year students) and MA government-funded and self-funded students on 18 January 2019. A total of 42 students participated in survey, were all 42student provided complete answers. For validity, the questionnaire was distributed to a group of Library Science faculty members and experts. The questionnaire was amended based on their views and distributed to the participants.

Apart from the central part of questionnaire that consists of four to six questions in each above explained categories of the PMC, survey was used to gather open-ended questions, as well as personal and demographic information.

4.1 Research findings

From the total number of 42 respondents that participated in the online survey, 87.5% were female and 12.5% male. 38.1% of the respondents were BA and 59.5% MA students, 58.5% were government-funded students, and 41.5% self-funded students. Most of the students that participated in the survey, study double major in Library Science and Comparative Literature (46.2 %), while others study double major in Library Science and History of Arts (14.6%) or Education (7.2%), Latin Language (4.8%) or Roman Languages (4.8%) and Oriental Philology (4.8%) as well.

Apart from learning about information literacy-related content across curricula,57.1% of respondents attended the information literacy program in the library of the Faculty of Philosophy, and 47.6% of students claim that they were not enrolled in this program, and 19% claim that they were not informed about this program. Also, 52.4% of students claim that they additionally

acquire information literacy competencies by means of self-learning, 14.3% by attending different seminars and trainings, 35.7% claim that during their studies they developed their information literacy competencies with the help of librarians, and 4.8% respondents consider to be well informed and educated about information literacy so they don't need to acquire these competencies outside the curricula.

When it comes to students' perception about their information literacy competencies, analysis of responses submitted within each PMC categories reveals interesting results in many aspects. These results vary depending on the study cycle and also on the type of double major study program that students enrolled in.

In first, Content category, in general, students feel quite confident in distinguishing primary, secondary and tertiary resources (57.1%), they feel competent to use electronic (69%) and print information resources (66,7%), to use online catalogue (73.8%), but only 50% of respondents strongly agree that they are competent to use databases. When compared to the other questions in this PMC category (for example, the use of online catalogue that has the highest rates), the level of their confidence decreases when it comes to the use of search engines, meta search engines and directories (only 47.6%, see Figure 1).

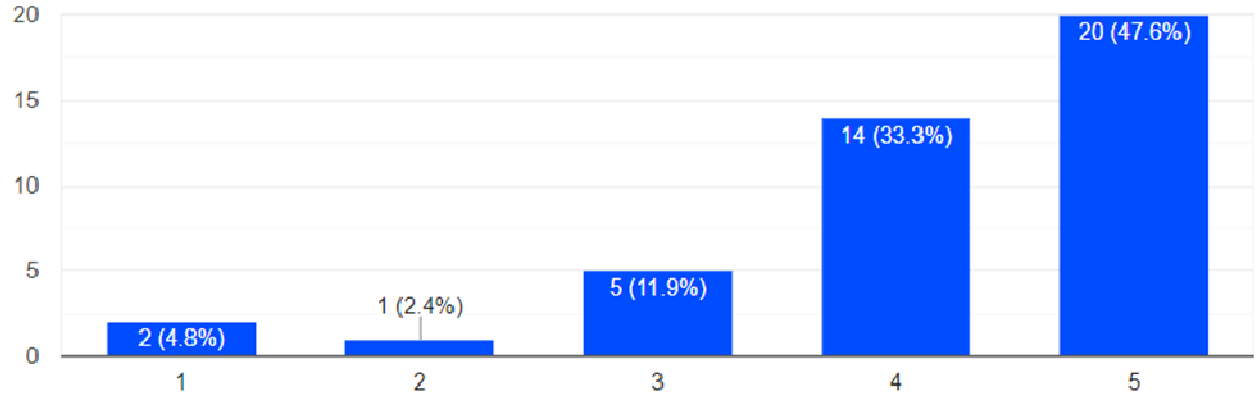

Figure 1. *Content category: Use search engines, metasearch engines, directories, etc.*

In contrast to the Content category, respondent answers in Skills category reveal lower self-efficacy beliefs. For example, only 31% of students strongly agree that they can define a search strategy, while 40.5% agree that they are confident in this segment. Additionally, 58.5% of students claim that they are most confident in using different search techniques and a small portion of 28.6% of students consider that they are very competent in redefining search strategy. Quite low ratings are detected in segment of defining information need. Only 38.1% of students strongly agree that they can define information need with no major difficulties, but both BA and MA students are most confident in searching for different information resources (Figure 2).

For the third PMC category, Evaluation, overall analysis indicates that 50% of respondents strongly agree that they can evaluate quality and credibility of information, also 50% students strongly agrees that they can evaluate information critically. 52.4% of respondents feel very confident in selecting relevant information, 47.6% in organizing information, while only 45.2% strongly agree that they can consolidate gathered information with no difficulties (Figure 3).

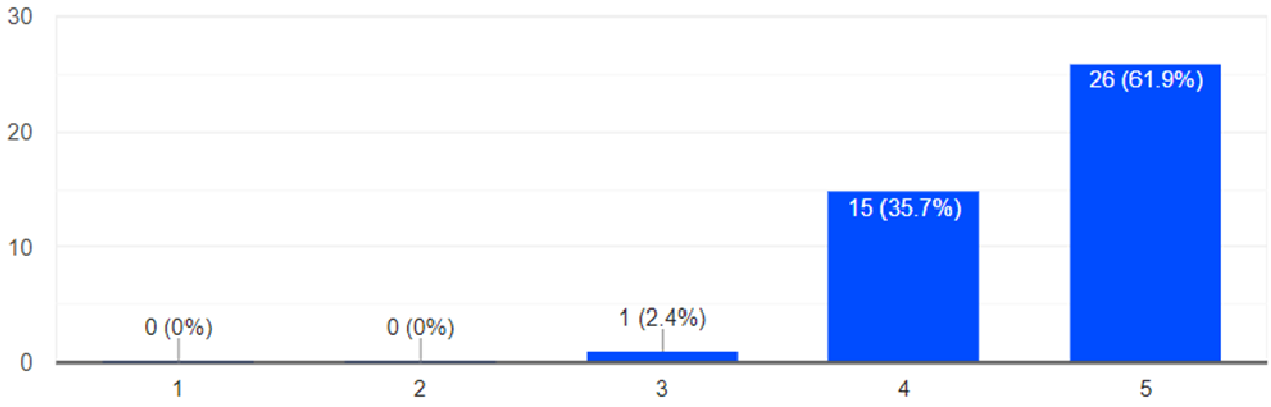

Figure 2. *Skills category: Search for different information resources*

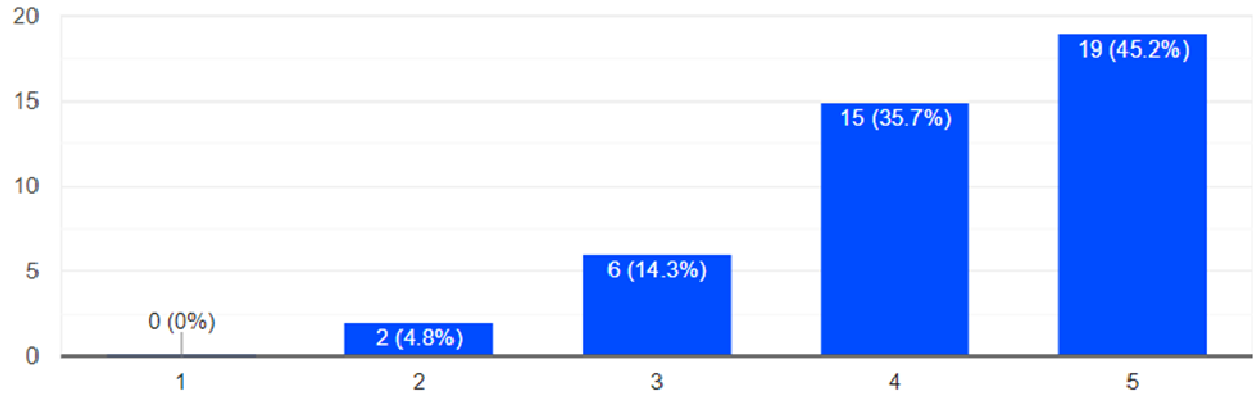

Figure 3. *Evaluation category: Synthesize the evaluated information*

Finally, for the Education category, 26.2% feel very competent to use, present and disseminate selected information in different forms. Also, only 9.8% consider themselves very competent to use different reference manager software (Mendeley, EndNote and others). 52.4% strongly agree that they can create bibliographic references for different information resources, while 76.2% of students strongly agree that they can cite information resources (Figure 4).

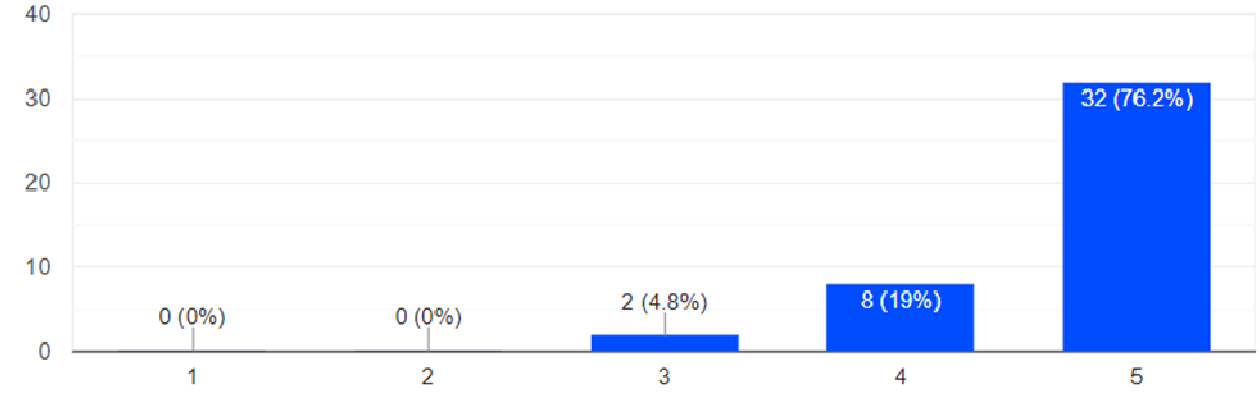

Figure 4. *Education category: Make citations, quotations and to paraphrase*

4.2 Research analysis and discussion

As noted above, the students' perception about their information literacy competencies is mainly determined by the study cycle and also by the type of double major study program that students are enrolled in. In this regard, BA students, expectedly, have to a certain degree lower self-efficacy beliefs while MA students are very confident in their information literacy competencies in each PMC category. Also, the analysis indicates that students that enrolled double major in Comparative Literature and Library Science are more confident in each skills category and aware of their roles as future librarians, in contrast to students that enrolled double major in Library Science and other study programs at Faculty of Philosophy.

In general, most of the students consider that their information literacy competencies in Content category and Evaluation category are high. In Skills category quite low ratings are detected in segment of defining information need, and in Education category only a small number of students consider themselves very competent to use different reference manager software (RA 4).

Accordingly, when students were asked to what extent would they improve self-confidence and information literacy competencies by attending mandatory and independent information literacy course within the curriculum, only 2.4% students replied that they would not benefit from introduction of a standalone information literacy course. This actually correlates with answers provided in regard to what extent students feel competent to educate others about information literacy, were only 19%, mostly MA students, feel completely confident to educate others about different aspects of information literacy (Figure 5).

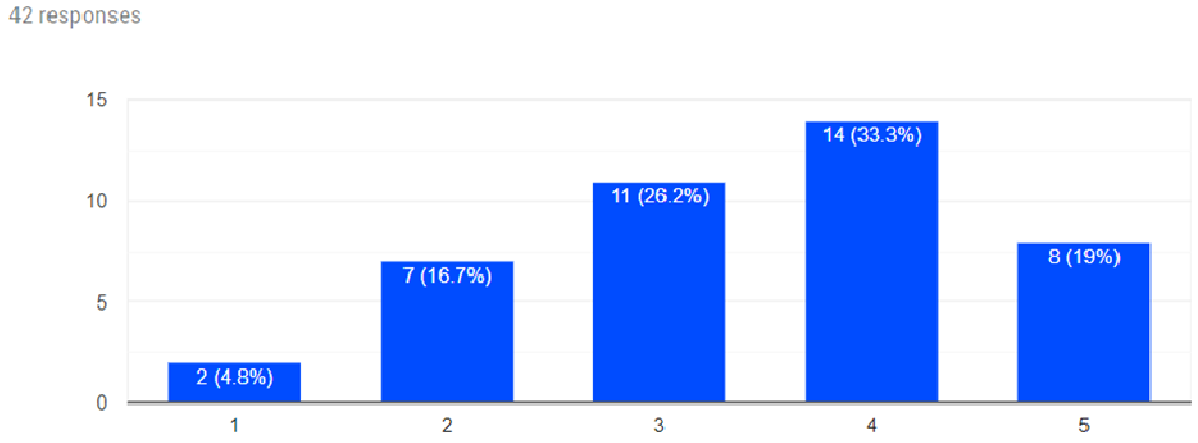

Figure 5. *Level of competency in teaching IL to others*

BA and MA students also had the opportunity to comment different questions and they submitted a total of 23 comments about the importance of information literacy. In general, in these comments, students accentuated that the information literacy competencies are crucial competencies of the contemporary society, but in comments provided, strong awareness about the important roles and responsibilities of librarians as educators of information literacy is partially missing when it comes to BA students.

5. Conclusion

Self-efficacy in relation to information literacy has also been explored in different scientific contexts and disciplines. The purpose of this survey was contribute to these kind of researches by developing self-assessment questionnaire based on PMC model, and consequently to obtain insight

in library science students' perception of their information literacy competencies, to detect to what degree students improve their information literacy competencies and confidence during studies, what possible difficulties they face in this process, considering that there is no separate information literacy course adopted in Department of Comparative Literature and Library Science curricula but the information literacy related content is offered and taught in different courses.

Answers provided by library students in all four categories of PMC model indicate that in some segments library science students have low self-efficacy beliefs in terms of their information literacy competencies which certainly requires the redefining of the information literacy content delivery practices. The survey indicates that further steps needs to be undertaken in order to provide appropriate delivery of information literacy related content, maybe in terms of creating and adoption of a standalone information literacy course in curricula, at the bachelor's level. Information literacy concepts should be unquestionably promoted outside the library science environment as well, by developing strategies for the delivery of information literacy content on the university level. In this process the contribution and engagement of information professionals from academic and professional community should be recognized as crucial.

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The Need for Separating the Collections in Academic Libraries

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The concept of collection is of crucial importance for libraries, museums and archives. Defining some clear criteria for documents belonging to one or another of the collections is closely related to the organization of knowledge included in them and has a direct impact on information access. These criteria are necessary more than ever under the existing conditions of digital collections. To this effect, the collection management becomes meaningful to a major extent. The paper will analyze by means of argumentation and examples, the necessity of separating the collections, will present membership criteria of document sets to particular collections and will approach the problem of customizing access to them. The examples provided are taken from the collections of four big Romanian university libraries.

Keywords: *library collections; academic libraries; membership criteria; document sets; customized access*

1. Introduction*

The meaning of collection management, a concept quite different from that of collection development, has to be understood as the activity of adding value, concomitantly with the devaluation of some information bearers, as a result of selection operations (Atkinson, 1998). Preserving in the library only one printed copy of serial publications which, actually, has also a digital version, became in the beginning of 2000's an issue of space but also one of resource effectiveness (Schonfeld 2013). The administration of traditional library collections, particularly the administration of an academic library collections, becomes the more so problematic as the information providing services are conditioned by a digital mentality. In a research report, Roger Schonfeld [1] estimates that the transition from printed to digital documents can be associated with the unsuccessful transition before the year 2000, from printed documents to microforms (Schonfeld 2013). The decisions about the preservation of a document in printed version under the circumstances of its existence in digitized version made the object of an operational research meant to develop a quantitative model concerning the risk management - with an emphasis on environment factors and natural catastrophes, but also with economic implications.

From the above paragraph we can keep in mind the difficulties of managing the library collections under the present conditions of information organization systems and the development of the so-called "digital mentality", mostly obvious in the academic community but, in practice, specific to the entire community of information users. The formal affiliation of documents to one or another of the library collections, the separation of collections according to clear, unambiguous criteria meant to help and promote the value of resources' content are the genuine challenges of today's library systems. The spectacular growth of library resources, the free access to a wide variety of internet resources and the need to adapt the offer to the ever new needs of library users, impose a change of attitude on the level of the academic library collection management.

We shall present in the ongoing a few arguments in favor of separating the library collections, look at some membership criteria for sets of documents to particular collections and tackle the problem of customized access to them. All considerations will be illustrated with examples from real

academic library catalogues.

2. Argument

The starting point in these considerations was occasioned by a visit to the Oslo University Library late in 1990, a first and decisive opportunity to see the advantages of an automated library at work, with a strong impact on future beliefs and performances.

At that moment, the unified catalogue of the Oslo University Library, also having a national functionality, contained three big subdivisions: SAMBOK for monographs, SAMPER for periodical publications and SAMMUS for musical publications. Additionally, the library was involved in a big image digitization project.

Six years after that, according to a report presented by Øivind Berg (1996) from the Oslo University Library at the ELAG'96 Conference, two image digitization projects were already finalized: *The Fridtjof Nansen picture database*, from 1992 and a database containing posters and photos showing the German occupation of Norway during the Second World War, from 1994. Another project for digitizing portraits of the Norwegian writer Henrik Ibsen was in progress at the date of Berg's report.

Consequently, the preoccupations of academic libraries to separate their collections according to a set of criteria justified by the optimization of access and an accurate highlighting of their resources is dating from longer than a quarter of a century. Digitization of images was the first step towards establishing digital collections for a variety of resources, organized in collections which are so popular nowadays. These are the reasons which generated the present approach.

3. The concept of collection - theoretical considerations

Despite the great number of studies in library and information science devoted to the role of collections in the scientific activity, little attention was awarded to determining the ontological status of collections or to the semantics of the quality of an element belonging to a collection. Collections were coined by theoreticians by terms like: "sets" (Gonçalves et al. 2004), "groups" (Galton 2010), "aggregates" (CIDOC 2010) or "selections" (Lagoze&Fielding 1998). Beyond the theoretical determination and the necessity of a systematic analysis, according to Wickett et al. (2011), the concept of collection has practical applications. The study of the three authors entitled "*Are collections sets?*" has as objective the improvement of the search, browse, analysis and extraction of information, in a register which includes metadata about the cultural heritage in the collections as such, but also in their elements.

The academic libraries hold in their custody multidisciplinary deposits of scientific data and their categorization is a necessity determined by their aim and destination. The clear definition of the categories has to take into account, according to the mentioned study, the relationships between the collections properties on different levels. In this context, the question in the title of the study is asked: "*Are collections sets*" i.e. in the mathematical sense of the word, of their component elements, of their members?

Introducing electronic resources in the library catalogues was a good opportunity for reviewing the way in which the collection development and management were approached. Re-conceptualizing the collections was produced by the inclusion of the digital resources in the libraries. Then again, the descriptions of digital collections are meant to provide contextual information (e. g. about the location, time and connected events, about the provenance, the method of acquisition etc.) to assist research about the elements of the collection. There is no consensual view regarding the attributes of the collection that makes it compatible with various collection concepts already mentioned, such as the electronic resource collection model (Heaney 2000). Such conceptual models, by means of defining the collection properties and the types of relations it can belong to, mediate the

understanding of the concept and constitute a starting point for terminology and informal definitions (Wickett et al. 2011). The existence of more models and definitions of collection can be the result of certain attributes which make some of them correspond to one concept of collection and others, to another.

The cited study uses the predicate *isGatheredInto(x,y)* for the relationship established between an *element* (x) and a *collection* (y) to which the element belongs. The name of this relationship belongs to the model of collection developed by Heaney (2000) and is used in Dublin Core Collection Application Profile (DCMI, 2007). This model states that a collection is *an aggregate of elements (items).* The meaning of the term collection is that the resource is described as a group and its parts can be described separately and enable navigation. In the same study, Wickett, Renear şi Furner (2011) use also the predicate *Collection(x)* to represent the *propriety of being a collection*. Having these closely related predicates the following informal definitions are given:

Collection: an aggregate of elements

Element (item): a physical or digital resource

to which a remark is added:

an *element* (item) *isGatheredInto* one or more *Collection*s

Starting from this data, 4 possible axioms are formulated for predicate *isGatheredInto(xy)*, as follows:

Axiom 1. If something *y* has something *x* gathered into it, then that thing *y* is a *collection*.

This axiom is derived from the two definitions previously mentioned.

The relationship defined by *isGatheredInto* includes also the *element*s, which can be characterized by the predicate *Element(x)*, hence the second axiom which states:

Axiom 2. If something is gathered into a collection, then it is an *element* (item).

The converse of the first axiom is:

Axiom 3. If a resource is a collection, then it has something gathered into it.

If this axiom is admitted, then it means that the existence of "empty", or memberless collections is denied.

Axiom 4. A collection can be incorporated as element in another collection, as sub-collection.

The question is whether a collection which belongs to a larger collection can be *gathered into* that in the same way as the elements of a collection. The answer is depending on the way the curator of that collection considers that a collection integrates those *collections* in a larger collection, or integrates individual *elements* of those collections in the bigger collection, depending on the properties or their membership qualities in previous collections (Wickett et al. 2011).

Concluding the four axioms the discussion about collections is reduced to a discussion about *isGatheredInto* by defining *collection(x)* on the basis of *isGatheredInto(x,y)*. Hence, according to Wickett, Renear and Furner one plausible definition of a collection is: "we have a *collection if and only if there is something gathered into it*". The definition is a unified affirmation of Axioms 1 and 3 and has the consequence, derived from Axiom 3, "that there are no empty collections". However, there are situations in which the curator reserves a space, a name, or a preliminary description of a collection which he estimates to create without having, at the moment of its creation, any element in that collection.

This study also presents pros and cons of the assertion that collections are equivalent to sets, one of the conclusions being that sets are commonly associated with the representation of collections in the conceptual models of digital library systems (Lagoze&Fielding 1998, Gonçalves et al. 2004,

and Meghini&Spyratos 2010). For instance, Lagoze&Fielding (1998) state that a collection is "a set of criteria for selecting resources from the broader information space". In other words, "any set of resources meeting a set of criteria is a collection", the membership being criteria-based. Collections are, therefore, sets of their members. Which holds true, according to the simply formulated set theory saying that for any two things there is a set that has just those two things as members. The authors of the cited study go further saying that this condition is necessary but not sufficient. A set whose members exist cannot become a collection "unless it is treated as such in the appropriate social circumstances". Hence, the quality of a collection is attributed to a set of elements by the role it has in particular social conditions.

In order to illustrate the theoretical approach just mentioned we show the way collections are separated at Bibliothèque Nationale de France (see Fig. 1):

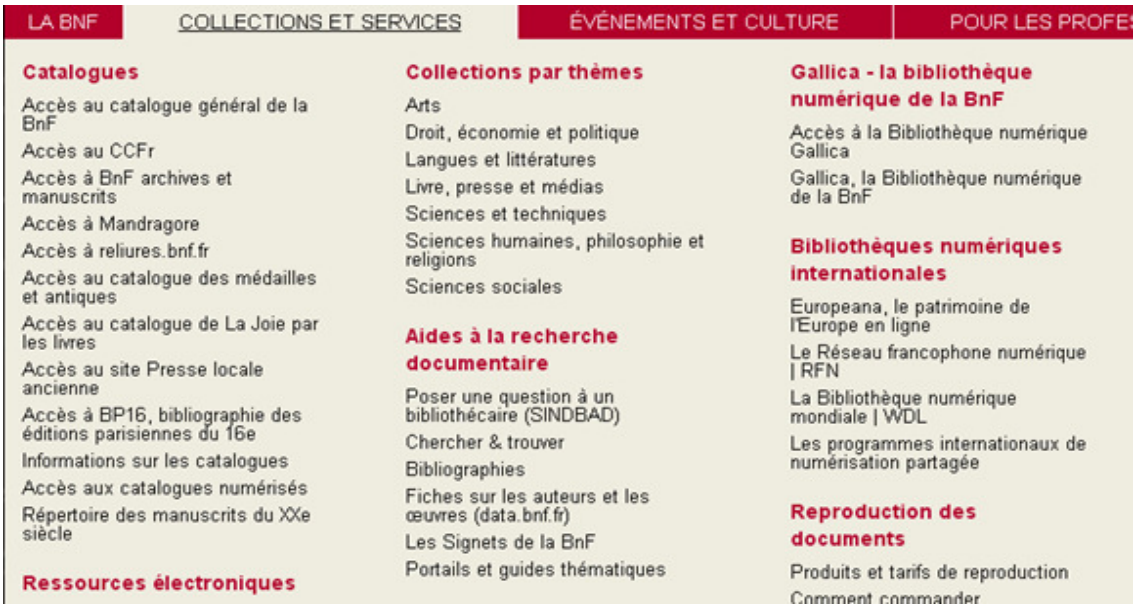

Figure 1. *Collections and services at Bibliothèque Nationale de France*

4. On selection criteria and membership of a collection

Collections are not mere arbitrary aggregates of texts, images, objects, data sets, but they are meant to sustain specific activities and that is why they are designed deliberately to serve a certain purpose (Currall et al. 2004). We shall look in the following sections at the way libraries apply this statement to digital collections.

The selection criteria used at *"Lucian Blaga" Central University Library of Cluj* (BCU Cluj) in organizing the digital library [2] are: 1) publications which are relevant for the city of Cluj and for Transylvania, 2) publications which are frequently requested by users and 3) documents scanned at the user's demand. The variety of document categories resulting after the application of these criteria expands from manuscripts and old and rare books, to visual documents, periodicals, books and excerpts, works edited by the library and bibliographic lists for university courses. An interesting category for the digital collection of BCU Cluj is *Transsilvanica* [3], a collection of digital documents which was organized earlier than the above-mentioned ones, and contains manuscripts and other cultural heritage documents selected according to historical and geographic criteria, exclusively concerning Transylvania (see Fig. 2).

Figure 2. *The opening page of Transsilvanica*

It goes without saying that apart from the digital library, BCU Cluj has a well-organized general catalogue having well-defined collections. The diversity of collections is the concrete expression of the purpose the library had in structuring them: satisfying the user's information need and an easy access to the content of those collections.

The online catalogue contains beside the digital collection itself, the digitized version of the traditional card catalogue (see Fig. 3 and 4). The latter is subdivided in its turn, into several sub-collections, such as: catalogue of special collections, which comprise manuscripts, incunabula, letters and rare books, catalogues for names of printers, typographies and printing centers, catalogues for old books, art albums, maps and atlases, prints, images, photographs/photocopies and ex-libris. To them all, a few catalogues for musical scores are added.

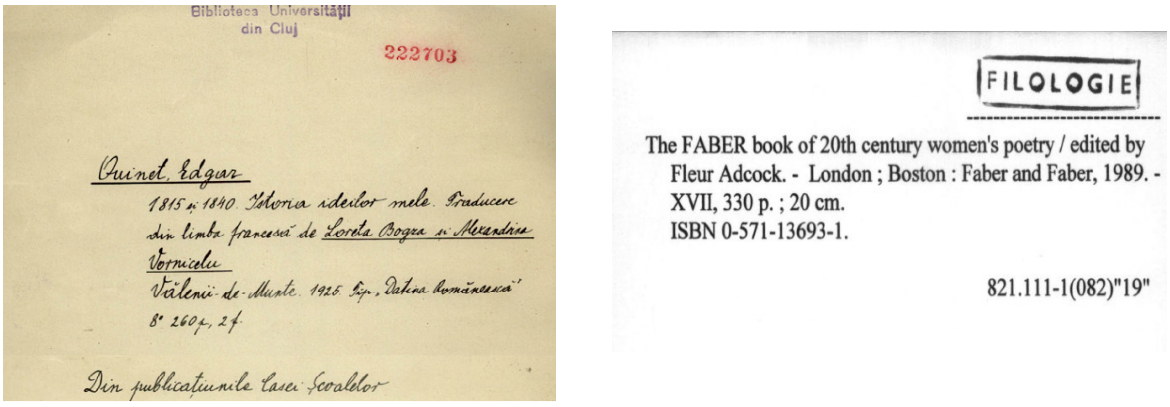

Figure 3. *Examples of digitized versions of traditional card catalogue from BCU Cluj*

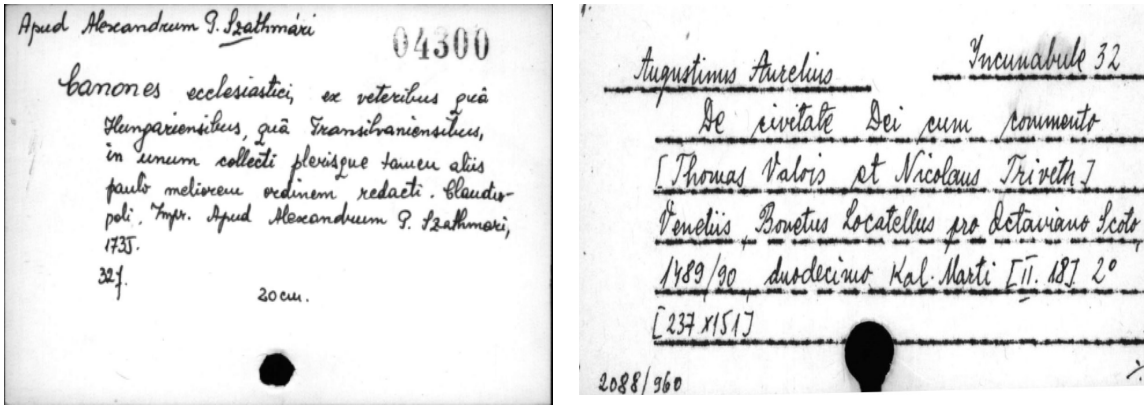

Figure 4. *Examples of traditional catalogue cards for names of printers and incunabula from BCU Cluj*

At *"Carol I" Central University Library of Bucharest* (BCU Bucureşti), within the digital platform called *Restitutio* [4] the following selection criteria were at work: the scientific value of the publication, the document's age, its uncommonness, the exceptional value of the documents for the Romanian and universal cultural heritage, the bibliophile value, the degree of the damage suffered by the documents and, finally, the frequency of the demand for these documents. The document categories resulted after the application of these criteria are: manuscripts and letters, old, rare and bibliophile books, Romanian and foreign current books published after 1880, serial publications, iconographic resources, information and documentation resources published by BCU Bucureşti and documents from the historical archive of BCU Bucureşti.

The last mentioned category is surprising by some inadvertencies, if not disrespect of fundamental rules regarding the author as an entity in the bibliographic description [5]. According to the Romanian law, an author is "the natural person or persons who created the work" [6]. According to the definition in the "Online Dictionary for Library and Information Science", an author is "the person or corporate entity responsible for producing a written work (essay, monograph, novel, play, poem, screenplay, short story, etc.)" [7]. Or, from the descriptions of the digital resources included in the category of *documents from the historical archive* [8] it results that their authors are librarians from BCU Bucureşti. Actually, those are the authors of contextual metadata concerning those resources. Likewise, some documents were included in the category of *information and documentation resources published by BCU Bucureşti* never-the-less they were elaborated under completely different auspices than those specified, the rule of uniformity of membership criteria being therefore, ignored.

The necessity of applying consistent selection criteria for the documents and respecting the attributes which provide the membership of different document sets to a certain collection are obvious demands required by the structural accuracy of the digital collection, the visibility of resources within the collection, and finally, the accomplishment of the purpose it was created for: to facilitate the access and satisfy the information need.

Further to the collaboration between "*Eugen Todoran" Central University Library of Timişoara* (BCU Timişoara) and the Regional Library in Zrenjanin (Serbia) a project called *BiblioIdent România* resulted, which is a cultural project as component part of the Romanian-Serbian Cross-border Cooperation Program.

The project is briefly described by the library's director, Vasile Docea (2013): *"It is about books from various fields, having Banat as subject and books written by authors from this region and works which were printed here. They are as relevant as possible for the multicultural character of the region. The books were printed in German, Hungarian, Romanian and Serbian. Many of them are in Latin".* [9]

Figure 5. *Record belonging to Biblioteca Banatica from BCU Timişoara*

Biblioteca Banatica gathers in a digital collection a number of about 1000 titles of documents including: books, leaflets, yearbooks, calendars, atlases, excerpts bound separately and printed music, provided by each partner in the project. A catalogue record for a document belonging to this collection is seen in Fig. 5 and scanned images of the title and contents pages are shown separately in Fig. 6. They both illustrate the facilities offered by the digital library records to the users of the library.

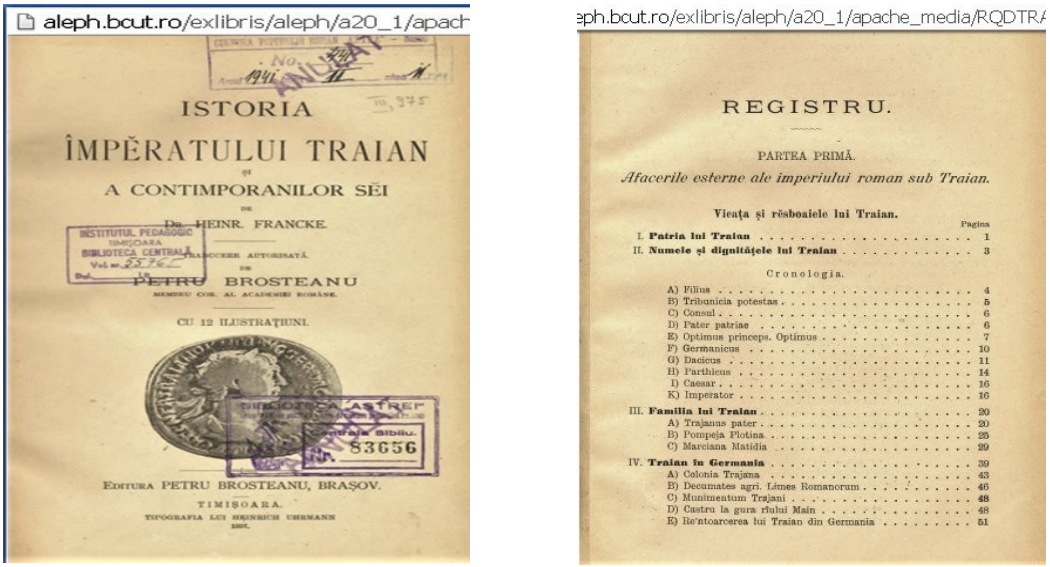

Figure 6. *Digital version of the title page and contents page of the document in the record above*

As far as the selection of the documents is concerned it was governed by criteria like: *the geographic criterion* of the printing or publishing place of the document (the geographic names are given in ten languages), *the subject criterion* (any field of knowledge on condition that it is connected with the historical Banat, together with biographies of personalities in the region) and the *criterion of the author or the editor's belonging to* Banat's culture. As far as the subjects are concerned, they are oriented to the history, culture and civilization of Banat and deal with the relationship between the communities existing in the historical Banat.

Another academic library, *"Mihai Eminescu" Central University Library of Iaşi* (BCU Iaşi) has a special situation. That means, unfortunately, that we cannot speak about a digital collection in itself in their case. At first sight, the online catalogue has only two big parts: 1) the general catalogue and 2) the traditional catalogue. At a closer look, the Aleph 500 catalogue of BCU Iaşi is more wisely structured than other library catalogues, the clarity of its presentation to the user being remarkable. We shall give extra details on the structure of this catalog further on.

According to the year of the library automation, two chronologically separated parts of the library catalogue were organized and additionally subdivided regardless of the information carrier.

The first category comprises:

- *Specialized catalogues* for books, periodicals, articles from periodical publications, plus a unified catalogue called România, created as a result of a collaboration contract with BCU Bucureşti and BCU Cluj, a catalogue pointed out by each of the partner libraries;

- *Separate databases* for: books from the 16th century, indexes for magazines such as: "Alma Mater"/"Dialog" and "Universul literar", documents regarding the European Union, eBooks, Bibliotheca Austria, Bibliotheca Germanica.

Digitized catalogue cards dating before 1995, the year of the library automation, were gathered into the second category which contains: books, periodicals and special collections. The bibliographic data relating to these cards were all introduced in Aleph 500, either with complete or summary bibliographic descriptions, so that the information existing in this catalogue can be retrieved (Fig. 7 and 8).

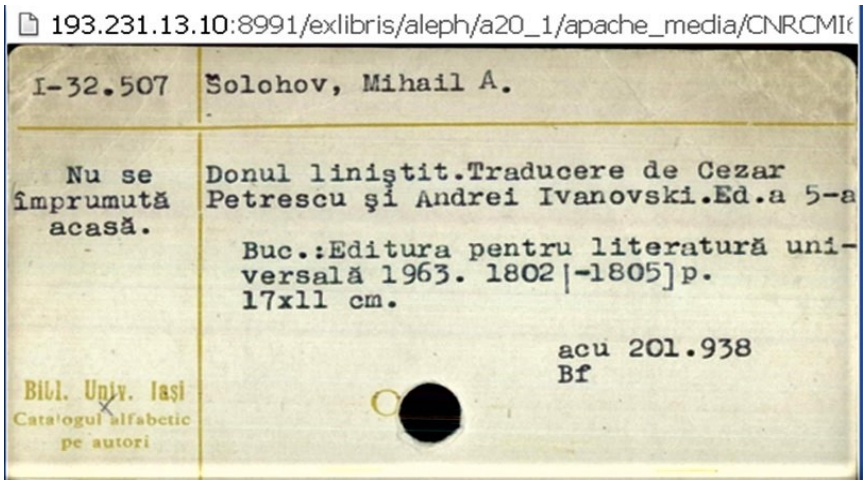

Figure 7. *Example of traditional catalogue card in digital version from BCU Iaşi*

A complete bibliographic record in the Aleph online catalogue comprises both the standard bibliographic description and the scanned library card as seen in Fig. 8.

5. General catalogue vs. digital library

Researchers state that the notion of sets is commonly used to represent collections in models of digital library systems (DCMI 2010). This will not hinder us from using the set properties also when we speak about library collections in general. As long as we have to do with a selection of resources in the information space, based on criteria and having a purpose in certain social circumstances, we can say that we have to do with collections. In the earlier mentioned definition of a collection element we read "a physical or digital resource". Starting from these premises we can talk about the common properties of library collections, irrespective of their nature.

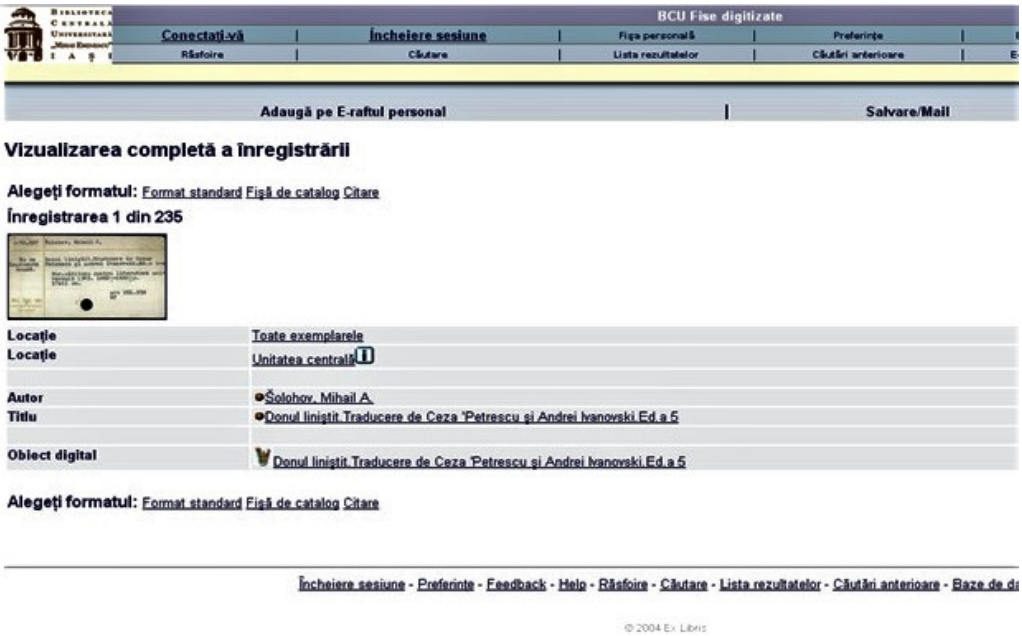

Figure 8. *Complete bibliographic record with scanned library card included from BCU Iaşi*

The examples given above illustrate the collection management in the four biggest academic libraries in Romania - the central university libraries. There are similarities but also big differences between diverse ways of thinking the collections and, implicitly, of exposing them to the public. It would be interesting to make user studies based on questionnaire and to compare the results obtained for a realist estimation of the catalogue use rate and the satisfaction of the user information need. Until then, however, we can compare the way the collections are reflected and the granularity or specificity of online catalogues.

We firmly believe that the first and most clear distinction that should be operated, no matter whether we consider the physical or digital collections, should be one between the *current collection of books and the old and rare book collection*. The category of the book as heritage object deserves a separate treatment, having special description rules, a special regime in terms of access and study. Hence, it is understandable why, in three out of the four considered libraries (BCU Cluj, BCU Iaşi, BCU Timişoara) the collections of old books and, in general, the special collections, are separated from the rest of the library collections in the online catalogue.

The recovery and valorization of traditional catalogues by digitization is a resource in itself and brings added value to library catalogues. Digitizing the old working tools - the traditional cards for books and periodical publications, the constitutive elements of the catalogues which enabled the access to the information contained in the library collections proved to be a good practice again, in three out of the four analyzed libraries (BCU Cluj, BCU Iaşi, BCU Timişoara). The information held in these resources is either made available to the user in the form of .pdf document, or, as in the case of BCU Iaşi, integrated in the online catalogue record to the benefit of the user finding additional information along with the advantages offered by the Unimarc format fields.

A careful analysis of the resource characteristics should be at the basis of the *selection criteria* used in creating digital libraries according to the set of properties of the contributing collections and in keeping with the *objective* pursued by each library. In most of the cases these criteria are: the frequency of the demand, the age, the scientific value of the documents and their value as cultural heritage objects.

Particular mention has to be made here on the *customized access* to certain categories of documents. At BCU Iaşi, for example, they make a welcome distinction between particular *sets of documents* belonging to the library resources. According to these sets, access is differentiated as

follows:

- BOOK (books), STA (standards), COR (corporative), PAT (patents), AFIS (posters) - are circulated for professors in Rooms nos. 1 and 2, or at home (according to status);

- SER (serials), ZIAR, ANUAR (yearbooks), ALM (calendars, almanacs) - are circulated only in the Periodicals room;

- A (albums), AT (atlases), H (maps), M (printed music), CDR (CD-ROM), DVD, ER (CD+DVD), CSV (video cassettes), CS (audio cassettes), DSC (discs), MF (microfilms), FC (photocopies), IL (photos), CP (postcards), ST (stamps), RV (old Romanian books), CR (rare books), MS (manuscripts), ARH (archive), DOC (documents) are circulated only in "D. Cantemir" Special collections room.

There is a need to make a special remark on the *collections of electronic books* (eBooks) found in all four analyzed libraries. These have been imported in their online catalogues as standalone databases, having both the bibliographic descriptions and the subjects in English as default values. Since they had all the required properties of a collection accomplished, their import as digital resource discretely delimited, they should not cause problems of access. And yet, instead of being separately emphasized, the eBooks collections were unfortunately incorporated in the general catalogue of the library, their value being thus significantly diminished by scattering the records throughout the general collection.

6. Conclusion

In a relatively recent study, Roger Schonfeld (2014) talks about the way the idea that the library should be the initial point in any research endeavor - an idea shared by many library directors - turns out to be in conflict with the practice of both teaching staff and students. Since today's library users opt for some other starting points, librarians should invest in ways to bring them back. There is also a good possibility that librarians should re-think their role and formulate a new idea about libraries.

Notes

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1. "Roger C. Schonfeld is director of Ithaka S+R's Libraries, Scholarly Communication, and Museums program. Roger and the team of methodological experts and analysts that comprise the program conduct research and provide advisory services to drive evidence-based innovation and leadership among libraries, publishers, and museums to foster research, learning, and preservation" (https://sr.ithaka.org/people/roger-c-schonfeld/).

2. Available at: http://dspace.bcucluj.ro/. Accesed 28.08.2016.

3. Available at: http://documente.bcucluj.ro/. Accesed 28.08.2016.

4. Available at http://restitutio.bcub.ro/. Accessed 28.08.2016.

5. This situation was true at the date this paper was written, in august 2016.

6. *Lege nr. 8/1996 privind dreptul de autor și drepturile conexe* [Law *no. 8/1996 on authors rights and related rights*], republished in 2018. Available at http://www.legi-internet.ro/legislatie-itc/drept-de-autor/legea-dreptului-de-autor.html#c133. Accessed 25.03.2019.

7. Dictionary definition available at: http://www.abc-clio.com/ODLIS/odlis_A.aspx. Accessed 28.08.2016.

8. Available at http://restitutio.bcub.ro/handle/123456789/221. Accessed 28.08.2016.

9. In Romanian in original: "E vorba de cărți din diferite domenii, care au ca temă Banatul, de cărți scrise de autori din regiune și de lucrări tipărite aici. Cărțile sunt cât se poate de relevante pentru caracterul multicultural al regiunii. Ele au fost tipărite în limbile germană, maghiară, română și sârbă. Multe sunt în latină".

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