

**REVISTA ROMÂNĂ
DE BIBLIOTECONOMIE
ȘI ȘTIINȚA INFORMĂRII**

**ROMANIAN JOURNAL
OF LIBRARY
AND INFORMATION SCIENCE**

Vol. 14, Iss. 1
2018

CONTENTS

RESEARCH ARTICLES

Manuela Zănescu

*The University Library - an Intercultural
and Multicultural Space, 1*

Vasile Deac, Ionela Burz, Alexandru Deac

*Researches on the Use of Micronized Product
D.Z.D. (1: 1: 1) in Laboratory and Deposit Conditions
for the Deacidification Treatments of the
Info-Documentary Collections, 11*

NEW LIBRARY PROJECTS AND SERVICES

Ioana Crihana

*The Public Libraries - Learning and Cultural
Transfer Ecosystems. Case study:
Cultural Agora @ Your Library, 30*

*Revista Română de Biblioteconomie și Știința Informării/
Romanian Journal of Library and Information Science (RRBSI)
14(1), 2018*

Quarterly journal edited by the Romanian Library Association

<http://www.rrbsi.ro>

ISSN 2559-5490, ISSN-L 1841-1940

Editors: Angela Repanovici, PhD, Professor, "Transilvania" University of Brasov
Robert Coravu, PhD, Lecturer, University of Bucharest

RRBSI is indexed in EBSCO Library & Information Science Source (starting with iss. 4, 2010), Central and Eastern European Online Library (CEEOL), Directory of Open Access Journals (DOAJ), and The European Reference Index for the Humanities and the Social Sciences (ERIH PLUS)

The University Library - an Intercultural and Multicultural Space

Manuela Zănescu

Deputy Director ad interim

„Eugen Todoran” Central University Library of Timisoara

E-mail Manuela.Zanescu@bcut.ro

The 21st-century university library is a space hosting a multicultural education process, whether by design, with a clear strategy, or in an unstructured, yet natural manner. For that reason, my aim is to identify aspects of multiculturalism in the „Eugen Todoran” Central University Library of Timisoara (BCUT), using a descriptive presentation of each aspect, along with quantitative data analysis. In a multi-ethnic city, cultural and educational institutions carry that multi-ethnic, multicultural mark. We set out to monitor and analyse to what extent this phenomenon manifests itself in terms of collections, staff, services provided, users, as well as cultural programmes and European projects. For this study, we have chosen a descriptive method, with a quantitative one being used for the statistical data obtained from the library software or from the questionnaire addressed to our foreign users.

The BCUT's multicultural nature is visible in its collections, with books and magazines written in a variety of languages; in its staff belonging to various local ethnic groups; in its users, who are either members of local ethnic minorities or come from other countries; in its services, especially the ability to access documents in electronic format, the partnership projects, and the cultural events organized.

Keywords: *university libraries; library collections; library staff; library users; cultural events; interculturality; multiculturality*

“An organization that simply contains many different cultural groups is a plural organization, but it is considered to be multicultural if the organization values this diversity.” (Du Mont, Buttlar and Caynon, 1994)

1. Introduction

Multiculturalism concerns the various cultures that coexist in a certain community space. „Multiculturalism is an answer to a series of specific problems concerning the coexistence of some populations viewed - or viewing themselves - as different.” (Ferrol and Jucquois, 2005). It was defined in the 1960s starting from the situation of different ethnic communities living together in countries such as Australia or Canada. The concept was rooted in the need to protect the values and traditions of these people having multiple cultural identities (according to the definition from *Encyclopaedia Britannica*). At the same time, programmes were developed in the US providing for the implementation of multicultural education in the educational system. The report on the study carried out by a group of researchers led by James Coleman, *Equality of Educational Opportunity*, known as the *Coleman Report*, mentions the importance of information resources in intercultural education (Coleman et al., 1966). Another study discussing *discrimination, racial segregation, and unlimited access to education* is the *Equal Educational Opportunities Act* (EEOA), which became a US national law in 1974 and is regularly amended.

Multiculturalism is a defining feature of contemporary society as a result of people’s mobility, as

well as the uninterrupted migrant waves. The IFLA document entitled *Multicultural Societies, Pluricultural People and the Project of Intercultural Education*, developed by a team that included Romanians, mentions the development of intercultural skills by expanding the knowledge of, and access to, other cultures (Byram, 2009).

The areas richest in ethnic diversity are Banat, Transylvania, Bucovina, and Dobrogea. Thus, the country's western region has a long multicultural tradition. Tolerance is what governs the coexistence among the ethnicities in Timisoara. As this is a border area, the frequent economic or cultural contacts have shaped a liberal behaviour regarding the religion, culture, and traditions specific to all ethnic minorities. The city is characterized by plurilingualism, ethnically mixed families, and a multicultural landscape. There are theatres here in the languages of large minorities (German, Hungarian, plus a Serbian theatre currently being envisaged), schools where the teaching language is Hungarian, German or Serbian, faculties with foreign language sections, etc.

“The population of Banat is Romania's most diverse one in terms of culture, language, ethnicity, and religion. Thus, the Banat region is currently home to the following ethnic communities: Romanians, Hungarians, Germans, Serbians, Italians, Slovaks, Jews, Bulgarians, Russians, Ukrainians, Gypsies, Arabs, Persians, Indians, Chinese, Greeks, Africans, Asians, etc. Obviously, members of these groups also speak their corresponding mother tongue in addition to Romanian, as well as international languages such as: English, French, German, Italian, Spanish, Russian.” (Docea, 2010) [1]

As part of such a multicultural place, the university library could not but join this support of diversity and multiculturalism. Multicultural communication is present in all libraries, whether having a dedicated strategy or not.

The BCUT *Managerial Strategy* also takes into account aspects of cultural diversity:

“the increasing presence of foreign students (through the Erasmus programme, as well as through the West University's international openness strategy), is a compelling reason for ‘adapting’ the library, among other things, by purchasing specialized books in international languages and by providing public relation services in such languages.” (Docea, 2010) [2]

Each university library is a multicultural oasis, thanks to the collections it owns, the services it provides, and the users it serves. Intercultural education at the library does not mean theorizing, but mainly interaction (with the librarians, the public, and the representatives of other cultures attending the cultural events).

2. Multiculturalism in the collections

Since its creation, the university library has owned document collections in foreign languages. Initially made up of donations from local personalities, the library, which was set up in 1948, did not contain sufficient documents for teaching and research as the Professor M. Ghermănescu mentioned in a letter addressed to the Public Ministry:

“We would like to mention that this Institute's teaching staff does not enjoy the same facilities as other colleagues in other university centres for their scientific work. The library has a very low supply of specialized books, purchased only occasionally, and not the most recent ones.” (Munteanu and Munteanu, 2004) [3]

As a result of the communist policy, the necessary content could only be purchased with a delay, and after much insistence with the Public Ministry, as can be seen from the notice sent to it by the Rector of the Pedagogical Institute (which subsequently became a university) at the time. Thus, in

1951, the purchasing of magazines from abroad is approved. Most of them come from the USSR or from Communist Bloc countries.

Throughout the library's operation, since its creation up to the fall of the communist regime, the development of collections was influenced by the party's policy, which focused on maintaining uniformity in all libraries and was limited to exchanges with other communist countries. Books in Russian, German, Hungarian, and Serbian were purchased, especially through a service called "Libraries' Collection". They formed the majority of the library's foreign language book inventory. During the slight liberalization of the 1970s, books in English and French were also bought.

With the development of the inter-library exchange service, which started in 1967, the book collections and especially the magazine collections in foreign languages diversified. It was during that time that a range of periodical collections was created that has remained "intact" up to now, due to the language barrier - magazines in languages inaccessible to the library public: Albanian, Korean, and Chinese.

After 1990, the library started to receive, first enthusiastically, but then more and more reluctantly and discerningly, donations from the West. The entire content of the first boxes of foreign books was added to the collections, because it was filling a nearly 50-year-old void; however, the selection became increasingly rigorous among the following rounds of donations, taking into account the library profile and its space-related limits.

Until the late 2000s, the library regularly purchased both foreign books and magazines. Collections of magazines of academic interest from all over the world were thus built. Following the economic crisis of 2007, the number of subscriptions decreased, and in 2010, printed subscriptions were dropped, as their content was largely available in electronic databases.

The library's foreign book inventory changed between 1990 and 2017, with Russian, Hungarian, Serbian, and German books no longer being the most numerous. English-language books account for 35% of users' foreign book requests during the past years, followed by French (22%) and German (16%) books. Other foreign languages amount to less than 10% each, with Finnish, Hindi, and Norwegian ranking last. Of the total of 334,964 books in the database, 105,077 are in foreign languages. The breakdown of foreign-language books in the library collections looks like this: English - 36,957; French - 23,603; German - 18,979; Hungarian - 6,808; Russian - 730; Italian - 2,658; Romany - 2,113; Latin - 1,437; Serbian-Croatian (Cyrillic) - 1,319; Spanish - 1,125.

The following foreign languages account for less than 50 titles each: Swedish - 29; Danish - 24; Finnish - 17; Hindi - 10; and Norwegian - 7. These figures reflect, first of all, the education structure at the West University. Most specializations with classes taught in foreign languages are in English, French, German or Spanish. The Faculty of Letters, Philosophy, and History has several specializations for English students, while the Faculty of Economics and Business Administration has specializations in English and French. The faculties of Political Science and Music & Acting have one German section each.

The inclusion in the library database of the book collection housed by the German Cultural Centre in Timisoara and the collection belonging to the Portuguese Department of the Faculty of Letters, History, and Philosophy, the creation of the *Banatica* database consisting of 1,000 heritage books, of which 500 are part of the BCUT Special Collections Library and 500 are located in libraries in the Republic of Serbia, are signs of openness towards multiculturalism.

Another collection enriching the library assets is the *Memorial Library*. The documents it contains were donated to the library by the Third Europe Foundation. These materials of a memorial nature are included in the library database and contain: *life-story* interviews, journals, photographs, articles. The ethnicities represented in these documents are: Romanians - 150, Germans - 75, Roma - 3, Jews - 40, Serbians - 20, Hungarians - 20, Czechs - 2, Slovaks - 2, Italians - 3, Ukrainians - 5.

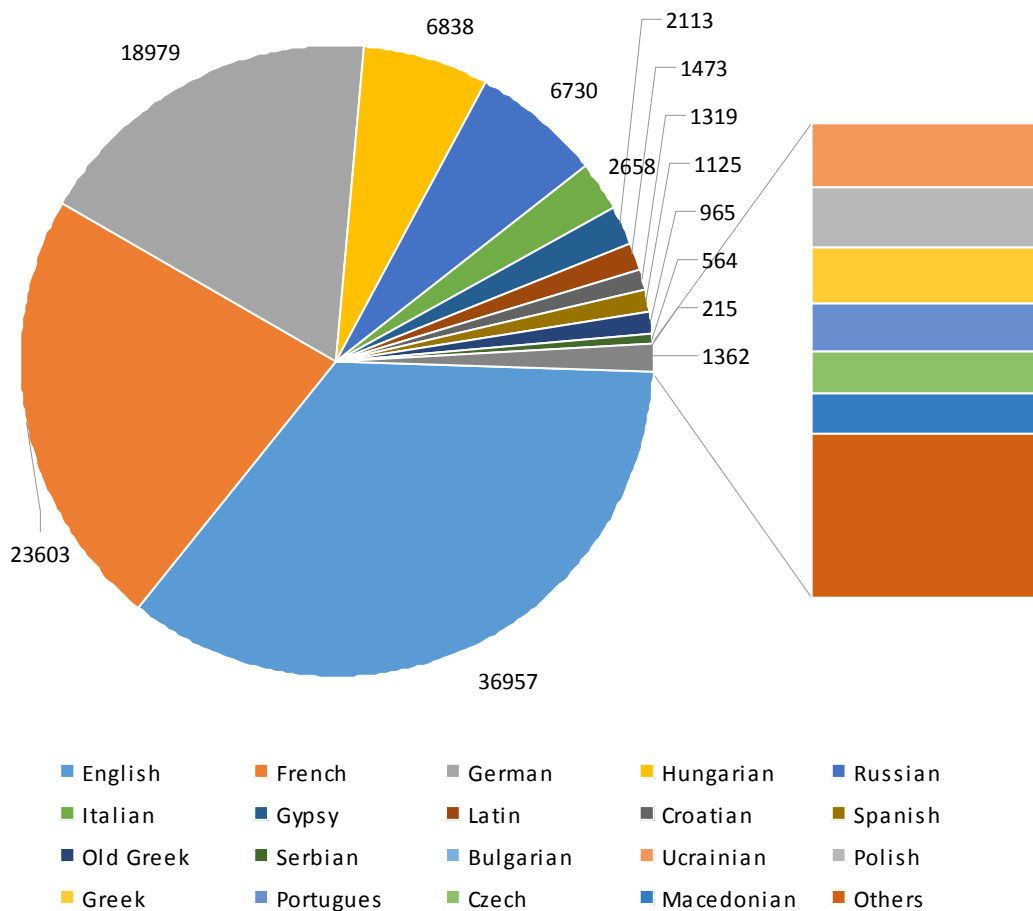


Fig. 1. Foreign-language books in the library collections

The setting-up of the various library collections implies impartiality and thus contributes to the public’s multicultural education. To facilitate cultural diversity means also to develop multicultural collections, says Lois Buttlar, whose studies are concerning ethnic minorities and multicultural population in libraries (Buttlar, 1994).

3. Multiculturalism among the staff

In some cases, multiethnicity manifests itself among the staff. Roberto G. Trujillo and David C. Weber, in their study *Academic Library Responses to Cultural Diversity: A Position Paper for the 1990s* suggest hiring librarians belonging to ethnic minorities as a way to ensure a good level of engagement with, and service to, users (Trujillo and Weber, 1991). The BCUT staff have been ethnically diverse since the library's first years of operation. The library hired Serbian, Hungarian, and German ethnics even during the communist period.

A massive staff cut took place in the 1980s, which deeply affected the library's activity as the Serbian native Mr Trifu Cnezevici, library director during the 1980s, mentioned:

“With the staff thus reduced, we were only able to maintain minimal and precarious levels of new entry records and processing, as well as user service.” (Munteanu and Munteanu, 2004) [4]

The library currently employs Hungarian, Serbian, German, and Bulgarian ethnics. Of the total of 87 employees, 10 are of different ethnicities, accounting for 11% of the library staff. These are native speakers of Hungarian, German, Serbian, and Bulgarian, and some of them speak several foreign languages. Most of the other employees can provide information in English, French, German or Italian. The library included free English classes in the staff training programmes each year between 2011 and 2015, as well as a German course taught by a member of the institution's staff.

Since 1990, job applicants must take an elective foreign-language test as part of the application process. Thus, the staff involved in Collection Communication and Preservation can have conversations in English, for an efficient communication with library users from other countries.

Most of the staff have studied library science at BA level or as part of the postgraduate Library and Communication Science programme. The employees have received *User Communication* training, which has improved their work.

Librarians' tasks include presenting the library and holding user training sessions in English.

In order to identify the issues faced by employees of the Collection Communication service (who deal with library users from other countries), we organized a *focus group* attended by 10 librarians. The librarians mentioned that there are no problems in terms of communicating with users of other nationalities than the Romanian one and that such users often come to the library to study their own materials. There is good overall interaction with them, they are independent users who know their way around even better than Romanian students. The main issue identified following the discussions was connected with Arab students' requests for a private praying space. In her article *Dealing with International Students in a Multicultural Era* (1992), Sarcodie-Mensah mentioned that "*Dealing with all patrons it is best for librarians to express religious and political views with extreme caution*". Because librarians faced many different users with different needs is important to train them in dedicated sessions.

4. Multiculturalism in the services

For years, the international exchange service, started in 1961 in our library, was the only gate to the cultural world from all communist states. During the communist regime the exchange relations were restricted to universities from the communist countries. The service started to grow after the 1990 and now we have more partners. In 2017 the library received 226 items (among them there are 43 books and 84 de journals in foreign languages), from 36 de partners. Interlibrary loan is another way for the library to communicate with university libraries abroad.

In terms of services, multiculturalism manifests itself mainly after the 1990s, first of all in the development of the inter-library loan service, and then starting from 2000, when access to scientific literature was made easily available to users through electronic databases.

The first subscriptions to electronic resources were purchased at the end of the 1990s. Initially, students encountered some difficulty accessing these information resources, due to a lack of foreign language skills to enable them to understand the texts. As the requirements for being accepted at West University faculties grew more demanding, the students also became more interested in the scientific articles available on the academic platforms. Quite many of the library users now request remote access passwords. The diversity of the periodicals, books, and PhD theses indexed in the subscription databases has led to an increase in the number of the library's external users. Translating the library website into English was another step in opening towards foreign users.

It is technology that removes the barriers imposed by geographic and linguistic boundaries. Knowledge of a foreign language, especially English, makes it easy to communicate with anyone, from any corner of the world, in real time.

Multicultural and multilingual library services ensure equality of service and access to information according to IFLA Manifesto (International Federation of Library Associations and Institutions, 2012) and it is of the 10 reasons to offer multicultural library services. We can find there a lot of examples of best practices of services targeted to undeserved groups, to minorities and to emigrants in order to use and improve our services.

In the era of technology, the library users can act independently, but they still need help from the specialised staff in order to easily find specific information.

5. Multiculturalism among the users

During the communist years, there were times when the West University enjoyed the presence of foreign lecturers and awarded scholarships for studies abroad, but very few students from outside Romania came to study here then. Most of the university's foreign students at the time were those in the preparatory year, taking Romanian language classes so they could then enrol at various faculties in the country, most often medicine. Most of the students learning Romanian came from Arab countries. Another category of foreign students during those times consisted of children of Romanians that had emigrated to the US or of German ethnics who had emigrated to Germany.

The opening towards the West in the 1990s led to the West University's participation in the Leonardo and Erasmus programmes, faculty department partnerships, and student and administrative staff exchanges. Thanks to this opening, the number of BCUT foreign users has also gone up during the past years.

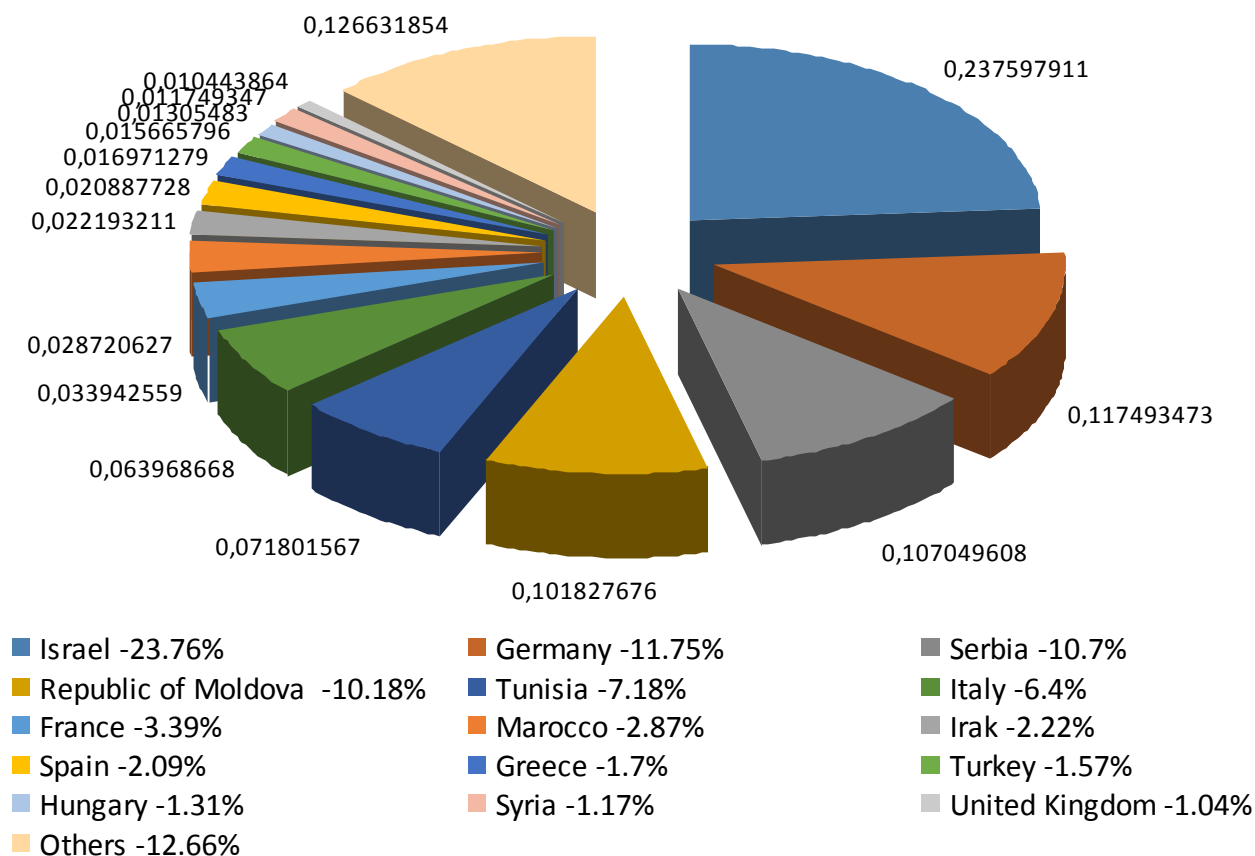


Fig. 2. Foreign user percentages and countries of origin

Most respondents to the questionnaire focusing on the library's foreign student users mentioned using the reading rooms *occasionally*, usually during the examination period. 81.8% of foreign students use the library for study and only 10% of them borrow books or access the databases.

This explains why 54.5% of them gave a neutral response to whether the collections suit their information needs, while 36.5% of them regard the collections as being suitable. Most of them view the librarians as being professional, mindful of the users' information needs (80%), while the others are of a neutral opinion. Only 46% of respondents say they ask librarians for help. They are satisfied by the space made available and by the library opening hours. 18% of them mention the unsatisfactory performance of the library Wi-Fi network.

Intercultural dialogue is now made easy thanks to the educational system training and introducing students to other cultures. Foreign language classes in school curricula also include lessons in culture and civilization, and plurilingualism is now common in society.

In the multicultural environment of university libraries, students of various ethnicities and from various countries have a chance to learn both the differences and the similarities. Through the meetings occasioned by using the reading rooms and participating in the cultural events taking place in the library building, students not only get to know other cultures, but also have a chance to interact and resonate. This happens with all users studying within the library spaces. Mixed groups of Romanian and foreign students or students from different countries are a common sight at the library.

Recognizing the similarities and differences between users can lead to the provision of new services to all of them, regardless of their origin. Another way of harnessing this information can lead to better staff training, through training sessions and workshops to facilitate communication with a multicultural public.

6. Multiculturalism in the library's relations

The library's partnerships involve national and international exchanges, national and international loans, cooperation protocols with various institutions whose employees wish to become library members, and partnership agreements or projects with cultural institutes or consulates for the organization of cultural events.

The projects carried out as partnerships have facilitated both the development of the database and the professional development of the staff, thanks to their being involved in the project activities. The first partnership agreement was concluded in 2012 for the setting up of the European Documentation Centre following an application with the European Commission in Bucharest. This centre aims to provide complex information and documentation services, giving its beneficiaries access to a collection of documents on European topics, developed both by Community institutions and by other publication providers, in traditional or electronic format, as well as *online*; to promote and develop education and research in the field of European integration by organizing events such as presentations, conferences, workshops. The librarians attending to users of this European Information and Documentation Centre provide general information on EU policies, promote and provide data concerning EU institutions and the Union's areas of activity, and guide users to find any kind of information on this topic.

Another step towards multiculturalism at the BCUT is the Romania-Serbia cross-border project called *Library as an Instrument of Building Regional Identity and Strengthening Social Cohesion - BIBLIO-IDENT*, carried out as part of the Romania-Serbia IPA Cross-Border Cooperation Programme.

The BCUT's partner in this project was the Zarko Zrenjanin Public City Library. The cooperation between the two institutions aimed to strengthen social and economic cohesion through information exchange, to stimulate scientific research into the joint history of the two border regions belonging to the historic Banat, and to create a joint database of heritage books. Project goals included: promoting cultural diversity; promoting cultural and good neighbourhood exchanges; respect for cultural diversity; showcasing and highlighting the heritage book inventory,

from the historic Banat up to 1900; building the Banatica database of heritage books dealing with the historic Banat or written by authors from this region.

The project activities, carried out with the participation of over 500 people from both countries, consisted in: 4 thematic regional and international conferences held in Timisoara, on the history of the Banat Region; 2 workshops attended by librarians from Romania and Serbia to acquire advanced heritage book description skills; building a joint heritage book database, *The Banatica Archives* (scanning, indexing, and translating the title page and table of contents of the 500 selected books into 4 languages - English, Serbian, Hungarian, and German), as well as scanning the entire content of 100 books.

Of the project conferences, I would like to mention *Interculturalism in Banat. Social Heritage and Identity Reconstruction* - a regional conference, and *Regional Identity and Social Cohesion. The Role of Libraries in Building Regional Identity and Social Cohesion* - an international conference with the participation of our partners from Serbia, as well as specialists in anthropology and history.

Social cohesion is a consequence of a multicultural social life and manifests itself through joint cultural programmes by neighbouring countries and a permanent cultural dialogue. Opening towards the regions is an act of promoting culture by showing the cultural diversity it contains.

Another cooperation between the library and cultural partners from abroad was the grant obtained for the study visit to Norway. The "Eugen Todoran" Central University Library was the beneficiary of a Norway Grants-funded project to establish cooperation relations with the Østfold University Library. For this purpose, two librarians from our institution went to Oslo and Halden in September 2015. The project goals included establishing a partnership relationship with the Østfold University Library in order to carry out a joint project and facilitating an exchange in the following fields: digitizing old library documents belonging to the national cultural heritage and designing a guidance/education programme for the library users, suitable to their cultural specificity, supporting professional development, and facilitating cooperation in order to adapt the library space to users with disabilities.

Following this visit, in May 2016, four librarians from the Østfold University Library were invited by our library to hold a workshop in the library auditorium and made a presentation of digital tools for BCUT librarians.

These projects helped establish cultural relations that have led to mutual cultural enrichment.

7. Multiculturalism through the cultural programmes

The cultural event programmes are an intercultural dialogue initiated by the library with its users. In time, this dialogue has involved major national and foreign cultural actors. The cultural events are held on a monthly basis and aim to earn public loyalty and educate the public through their academic and cultural content. We have aimed to organize academic events, inviting personalities from various fields, of interest both to researchers and to teachers, students, and the general public interested in various science and art topics. The cultural activity calendars include book launches and debates, conferences, narrative films and documentaries, musical and theatrical performances, exhibitions, workshops on library science and information science.

From the long list of cultural meetings, we are going to select just those moments that were accomplished with the involvement of foreign partners or the participation of guests from other countries. Since 2011, our event format has included the organization of events that show parts of other peoples' culture to the public. We started with the *National Day of the Republic of Serbia*, in January, 2011, aiming to present to the public the image of a great Enlightenment figure - the writer and translator Dositej Dimitrije Obradović, born in Ciacova, Timiș County.

In May 2011, the *Mexican Culture Days* introduced event participants to the defining features of Mexican culture: Mr Rodolfo Arturo Herrera Saldaña, Cultural Affairs Officer at the Mexican Embassy in Bucharest, held a presentation (in Romanian) entitled *Introduction to Mexican Culture*; a

reading of *Mexican poetry*, translated and read by students at the Faculty of Letters at the West University of Timisoara; a round table (in Spanish): *Cultural Identities in Mexico and Spain* (with the participation of Mr Rodolfo Arturo Herrera Saldaña, Cultural Affairs Officer at the Mexican Embassy in Bucharest, as well as Jorge Gonzáles Garrido, a teacher at J.L. Calderon High School in Timisoara, AECI Lecturer Sonia Sobral Vázquez, and Mr José Miguel Viñals - now Honorary Consul of Spain in Timisoara); Mexican short films (*Guardians of Silence, Mexican Golden Hands, México à la carte, The Offering of Souls*). The two Mexican culture days ended with a traditional Mexican dance prepared by the three Mexican citizens who were in Timisoara at that time.

Some of these actions that facilitate intercultural dialogue have become permanent by now: the *German Culture Days* and the *Polish Film Days* are known to a wider public in Timisoara, not just to university students. The appreciation these events have enjoyed has led the local media to enquire and ask for details of their content at each new edition. The cooperation with the consulates in the city is a good tradition of our institution.

The step taken by the library towards the cultural centres and consulates through constant cooperation is a form of cultural dialogue. The interest in other cultures and the availability of interaction with representatives of these institutions in order to bring to the library's audience cultural events representative of other cultures show not just our staff's intercultural skills, but also our library's multicultural nature. Another way to extend this subject is to continue the research about the multiculturalism and interculturality in cultural activities, through surveys and interviews to finding out more about the public's expectations and preferences. Cultural services can serve as examples of intercultural education when designed and organized that way. This type of interaction involves socializing and cultural immersion. The library thus becomes a place of intercultural exchanges, encouraging and fostering open expression, tolerance, and mutual respect.

8. Conclusions

"The communication between the Minorities in Banat has always been remarkable, its support being plurilingualism practiced in all minority ethnic communities" (Banciu and Coardos, 2012) [5]. That background made the university library an open space for all users, and help us to very easy identify multiculturalism in each aspect of its existence. In a short description we can see that the library develops culturally diverse and multilingual collections and services, including electronic resources.

The paths that open up a constant preoccupation of the library for multiculturalism and interculturality are various. From the appropriate completion of collections to the development of cultural competences among employees, the organization of cultural programs, the initiation of projects and the implementation of new services for users.

Pointing out all the ways in which multiculturalism is noticeably in our library was necessary as it is the first contribution that helps defining ourselves as an organization which has a global reach with a local touch. The lack of prior research on this topic determined me to give this general view on the subject with only a few highlights on the forms of multiculturalism. There are many possible new or expanded ways of in-depth interpretation and ways of studying multi-and inter-cultural issues in our library.

The key finding in my analysis is the diversity of approaches to the subject. A comparative method of research can reveal, for example, the evolution of the users' interest in resources in other languages. An increased cooperation between the Library and the University on the issues of multi/interculturalism and more information sharing among the two would certainly lead to new approaches to the subject.

By being aware of all the facets of multiculturalism, the library discovers its own cultural identity, its cultural diversity and pluralism.

Notes

1. Romanian version: „Populația Banatului se caracterizează prin cea mai mare diversitate culturală, lingvistică, națională și confesională la nivelul României. Astfel în prezent există în regiunea Banatului următoarele comunități naționale: români, maghiari, germani, sârbi, italieni, slovaci, evrei, bulgari, ruși, ucraineni, țigani, arabi, persani, indieni, chinezi, greci, africani, asiatici etc.. Evident, membrii acestor grupuri vorbesc pe lângă română și limbile materne aferente, dar și limbi de circulație internațională ca: engleza, franceza, germana, italiana, spaniola, rusa”.
2. Romanian version: „prezența în continuă creștere a studenților străini (prin programul „Erasmus”, dar și prin strategia Universității de Vest de deschidere internațională), obligă la măsuri de „adaptare” a bibliotecii, între altele prin achiziționarea de cărți de specialitate în limbi de circulație internațională și prin servicii de relații cu publicul în astfel de limbi”.
3. Romanian version: „Ținem să precizăm că membrii corpului didactic al acestui Institut nu au înlesnirile celorlalți colegi din alte centre universitare în vederea muncii lor științifice. Biblioteca este foarte puțin înzestrată cu cărți de specialitate, procurate ocazional și nu dintre cele mai noi”.
4. Romanian version: „Cu personalul astfel redus nu am reușit decât să menținem la o limită minimă și precară atât evidența și prelucrarea publicațiilor nou-intrate, cât și servirea beneficiarilor noștri. În aceste condiții nu se putea efectua nici una din lucrările rămase restante și nici o programare nu ar fi putut fi respectată”.
5. Romanian version: „Comunicarea între minoritățile din Banat a fost întotdeauna remarcabilă, suportul său fiind plurilingvismul practicat în toate comunitățile etnice minoritare”.

References

- Banciu, D. and Coardoș, D. (2012) Promovarea multiculturalității în era digitală în spiritul dezvoltării durabile [Promoting multiculturalism in the digital age in the spirit of sustainable development], *Revista Română de Informatică și Automatică*, 22(2), pp. 39-48, available: <https://rria.ici.ro/wp-content/uploads/2012/06/06-art.-DB-Multiculturalitate-1.pdf> [accessed 11.04.2018].
- Buttlar, L. (1994) Facilitating cultural diversity in college and university libraries, *The Journal of Academic Librarianship Online*, 20(1), pp. 10-14, available: [https://doi.org/10.1016/0099-1333\(94\)90128-7](https://doi.org/10.1016/0099-1333(94)90128-7) [accessed 11.04.2018].
- Byram, M. (2009) *Multicultural Societies, Pluricultural People and the Project of Intercultural Education*, Strasbourg: Council of Europe Language Policy Division, available: <https://rm.coe.int/multicultural-societies-pluricultural-people-and-the-project-of-interc/16805a223c> [accessed 10.03.2018].
- Coleman, J.S. et al. (1966) *Equality of educational opportunity*, Washington: National Center for Educational Statistics, available: <https://files.eric.ed.gov/fulltext/ED012275.pdf> [accessed 11.04.2018].
- Docea, V. (2010) *Strategia managerială* [Managerial Strategy], available: http://www.bcut.ro/dyn_doc/StratManag.pdf, pp.2-3 [accessed 11.04.2018].
- Du Mont, R.R., Buttlar, L. and Caynon, W. (1994) *Multiculturalism in libraries*, Westport: Greenwood Press, p. 18.
- Ferrol, G. and Jucquois, G. (eds.) (2005) *Dicționarul alterității și al relațiilor interculturale* [Dictionary of alterity and intercultural relations], Iași: Polirom, p. 451.
- International Federation of Library Associations and Institutions (2012) *IFLA/UNESCO Multicultural Library Manifesto - Implementation Kit*, [s.l.]:[s.n.], available: https://www.ifla.org/files/assets/library-services-to-multicultural-populations/publications/ifla-unesco-multicultural-library-manifesto_implementation-kit_2012-12.pdf [accessed 11.04.2018].
- Multiculturalism, *Encyclopedia Britannica*, available: www.britannica.com/topic/multiculturalism [accessed 11.04.2018].
- Munteanu, I. and Munteanu, R. (2004) *Universitatea de Vest din Timișoara* [West University of Timisoara], Timișoara: Editura Universității de Vest, p. 80.
- Sarkodie-Mensah, K. (1992) Dealing with International Students in a Multicultural Era, *Journal of Academic Librarianship Online*, 18(4), pp. 214 -216, available: <https://eric.ed.gov/?id=EJ451951> [accessed 11.04.2018].
- Trujillo, R.G. and Weber, D.C. (1991) Academic Library Responses to Cultural Diversity: A Position Paper for the 1990s, *Journal of Academic Librarianship*, 17(3), pp. 157-161, available: <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=9705180885&site=ehost-live> [accessed 11.04.2018].

Researches on the Use of Micronized Product D.Z.D. (1: 1: 1) in Laboratory and Deposit Conditions for the Deacidification Treatments of the Info-Documentary Collections from Libraries, Archives and Museums

Vasile Deac

Researcher, PhD

“Gh. Sincai” County Library of Bihor, Oradea

E-mail Vasile_deac@yahoo.com

Ionela Burz

Librarian, PhDc

University of Oradea Library

E-mail ionela_burz@yahoo.com

Alexandru Deac

Specialist in systems engineering and environmental biotech

Inteva Company Ltd., Oradea

E-mail deac.alex38@yahoo.com

For the protectionists (conservators, restorers) of the info-documentary collections in libraries (museums and archives), but also for the specialists who are studying techniques for the hygiene of cultural environments, natural nanoparticles represent untapped professional choices, which can have spectacular implications for the protection of info-cultural assets from Romanian libraries, museums and archives.

The paper represents a practical application developed and applied in library environments in order to establish the technology for the use of natural nanoparticles to protect the info-cultural goods and to maintain the hygiene in the library environments .

Keywords: *library collections; preservation; protection; nanoparticles; nanotechnologies; zeolite; diatomite*

1. General aspects

Researches on the use of DZD [1] micronized product in laboratory and deposit conditions, for the deacidification treatments of the info-documentary collections in libraries, museums and archives, represent a scientific approach based on a research-development partnership program between the conservation-research laboratory within "Gheorghe Șincai" County Library, Oradea - represented by Dr. Vasile A. Deac, Scientific Researcher and SC Zeolitos SRL Oradea, represented by Florin Clepe, CEO of the institution.

The research entitled *Studies on the influence of DZD nanoparticle treatments upon some chemical properties of the paper - practical applications on the library collections* started in 2015 and will continue until the end of 2021, when we are going to have certain results on: the elaboration, testing and homologation of the nanoparticle-based products for the use in the chemical treatments of information-carrier papers from libraries, museums and archives; elaboration and application of the acidification neutralization technology (museum, archive) in the case of library collections for all info-documentary collectors (individuals and legal entities). The applications regarding the mechanical properties of the treated paper (resistance to tearing due to handling and research, as well as aspects of pH restoration and text-fixing, as well as the effects in

preventing the fauna and flora specific to the degraded collections will remain professional research efforts to highlight the plasticity of the products under the form of nanoparticles at atomic level, obtained by mechanical synthesis.

The combined nanometric structures (DZDs) are not only very small (1-23 microns), but they also possess totally unique and unexpected properties compared to each product analyzed separately. These properties can be extremely useful in the treatments for the preservation of the info-document collections in libraries, museums and archives. Based on this nanometric structure of the fine particles from the nano-products within this composite, it is believed that the chemical synthesis of DZD product may have the ability to build new complexes, complying with its significance at the atomic level, which can generate positive effects for beneficial interventions in preserving the information-carrier paper. Performing basic laboratory investigations in parallel with the practical applications from the deposit on the info-documentary collections represent, for the team involved, scientific approaches essential for shortening the time of conducting laboratory analyzes and testing the research variants under different repetitions in order to obtain preliminary results. This experimental technique is required as a mandatory step to go through, being part of a wide-range scientific approach by which the research variants that reach a higher stage of research (nanoparticle-like products and / or by-products) are selected and analyzed.

Importance of the research programme:

- access of beneficiaries to environmentally-friendly, handy and qualitative products that can successfully compete with expensive, costly and demanding chemotherapeutic methods;
- it is believed that the usage of DZD complex product will represent, through the researched directions, a viable solution for the preservation and hygiene of the info-documentary collections from the libraries, museums and archives, namely for the chemotherapy treatments of the paper (deacidification of documents, restoration of paper's mechanical and chemical indices, fixing of text and color images) and prevention of the fungal complex specific to biodegradable documents);
- the use of Dolomite-zeolite (D1:Z1) represents a viable and of a great perspective solution that can be used without restrictions in each library (museum or archive) for the performance of ecological chemotherapy treatments;
- diatomite with dolomite and zeolite, or separately, can represent a successful natural agent against pests in all the environments of a library, museum or archive; the death of the pests does not occur suddenly because the diatomite does not act chemically but mechanically, destroying the exoskeleton of the insects;
- the final stages of the research phases in this program will be punctuated by the activities of product homologation and the development of nanotechnologies for the involvement of the nanometric size products, approximately between 1 and 100 nm (one nanometer is a billionth or 10^{-9} part of a meter, one nanometer is as small when compared to an apple as an apple is when compared to the planet Earth);
- for the elaboration of nano-technologies, some nano-sized materials were used ranging from 3 to 63 microns [2];
- the researches started both in the Conservation-Research Laboratory within „Gheorghe Șincai” Bihor County Library, Oradea (fundamental laboratory research), but also in the collections of the deposits from the library in Oradea, as well as at „Gheorghe Asachi” Technical University from Iași, have laid the foundations of some new scientific concerns, which once started and deepened, will decipher aspects that will open up new strategies in laboratory techniques and the practice of using micronized products in applicative ecological chemotherapy from the library environments (collections and spaces);
- there are strong beliefs that this new field of research can develop viable, clean, non-toxic, effective, high-end solutions to save the written heritage from libraries, museums and archives.

2. Objectives, materials and research methods

2.1 Objectives

The Conservation and Research Laboratory within "Gheorghe Șincai" County Library, Bihor, Oradea, conducts a sustained scientific activity on identifying new materials and developing conservation and restoration techniques that contribute to the protection and preservation of the cultural heritage of libraries, museums and archives. The reformation of the intervention system, as well as of the educational one in the field of Romanian cultural heritage protection, based on the scientific principles of investigation, evaluation and protection, represents a professional creed for the conservative specialists.

Currently, preservation as a stand-alone science uses technical instruments belonging to chemistry, physics, biology and microbiology, laboratory experimental techniques and, more recently, to nanotechnology. All these fields, with their own scientific structure and apparatus, strive to protect the cultural values of libraries, museums and archives through original and viable expertises and solutions.

Therefore, there are proposed, for analysis, the main objectives that are studied in the laboratory and in the practice of preserving the info-documentary collections from libraries, museums and archives:

- micronizing of materials compatible with the protection of the info-document collections from libraries, museums and archives;
- elaboration of intervention technologies in the preservation and restoration of info-document collections from libraries, museums and archives, compatible with the newly-identified and researched structures or networks;
- identification of zeolite-based natural products, presentation of the chemical composition - silico-alumina component; laboratory tests on the use of zeolite products in the treatments regarding: decontamination and treatment of historical paper attacked by the fungicide complex specific to the paper; correction treatments of mechanical and chemical indices;
- micronization of the dolomite-based products, synthesis of hydroxy-alkali nanoparticles and their application on historical paper for the deacidification of library collections; fixing and preservation of texts and color images; restoration of paper structure and texture;
- development and application of the nanotechnology to prevent paper aging as long as possible by applying nanotechnology based on the technology that builds complex structures while complying with the atomic specifications by using mechanical synthesis;
- research on the properties of nanometric chemical structures in the chemo-paper treatments by microscopic study, compared to the properties of the same substance at macroscopic level;
- dynamics of the pH evolution for the library collections before and after treatment;
- laboratory and deposit research on the use of the diatomite product in the control of the creeping insects from library environments: deposits; modules for keeping and preserving info-documentary collections from libraries, museums and archives; development of the technology for the use of diatomite product under the form of wet treatments (solutions under the form of emulsifiable concentrations in special cases) restrictions on the use of insect-fungicides in special deposits or other spaces with impact destinations for cultural institutions.

2.2 Material and Research Method

To justify the technology of using products under the form of Zeolite, Dolomite and Diatomite nanoparticles, some technical specifications were presented for each product that can be used in

the conservation and restoration of the info-documentary collections, individually or in combinations.

2.2.1 About Zeolite and the usage of the product in the conservation of the info-documentary collections

Zeolites are considered as inorganic stoichiometric polymers whose properties are quantitatively correlated with the chemical composition. Because of silico-alumina compositions, Al^{3+} and Si^{4+} can be partly or totally replaceable with atoms of other elements and also because of the proven possibilities to crystallize in several structures (depending on the conditions of synthesis, the number of zeolite structures seems unlimited). Up to now, 41 natural zeolites have been identified and 430 zeolites and isotopes, that also contain 133 types of zeolite networks, have been obtained. The scientific interest in zeolitic and zeolite-type materials, including the protection of info-documents in libraries, museums and archives, have spurred fundamental and applied research into the synthesis of new materials and new structures or networks. Thus, in 1970, 27 zeolite networks were known; in 1978 their number increased to 38; in 1988 their number increased to 64, in 1992 to 85 zeolite networks, in 1996 to 98 zeolite networks, and in 2001 there were recognized 133 zeolite networks.

Zeolite is a special mineral having a microcrystalline and dynamic structure with a strong detoxifying action, being the only mineral known to be negatively charged on the earth, offering the natural attraction and absorption capacity of positively charged pollutants. The zeolite is crystallized and functions as a chemical cocoon. Specialists also call it as the *molecular sieve* because it extracts the pollutant cations, bacteria, viruses. The essential role in the beneficial action of the Zeolite consists in its nanotubes, with the size of 4.5 Angstroms, which capture and retain heavy metal atoms, radioactive ions, viruses, microbes and infested molecules.

There are many varieties of zeolite used successfully in human medical practice, but a single variant of zeolite has very good capabilities in the protection of paper-based information papers, namely *Clinoptilolite*.

The zeolite variety offered by SC Zeolitos SRL and used in the tests performed in the conservation-research laboratory within „Gheorghe Șincai” Bihor County Library, Oradea, presents a mineralogical and chemical composition very useful for the treatments to filter, block, retain and then eliminate by washing a lot of contaminants specific to biodegraded collections. This special capacity belongs to the *zeolite with Clinoptilolite variety*: 71%-83.3%. Table 1 highlights the technical specifications of the Zeolite product regarding the mineralogical and chemical composition, as well as other determinations, among which the most important are: *pH value; colour; cationic exchange capacity on calcium, magnesium, potassium, sodium ions; water absorption; total porosity*.

In the treatments performed in the laboratory from Oradea on the preservation of the newsprint collections (Fáklya, years of appearance: 1979-1981, terms 1-4), the Zeolite product with its Clinoptilolite variety 83.3% represented the basic component together with Dolomite and Diatomite products, to form a complex solution (Zeolite + Dolomite + 2% Diatomite in distilled water with a pH=7). For the preservation of the collections on low-quality paper (especially the newsprint), no other forms of zeolite are used, and more than this, no synthetic forms are used, for the sole reason that the synthetic zeolite is very expensive, being used only in certain special technological applications (special conservation and restoration). *Zeolite micronization* is the form in which the product is made accessible in the preservation treatments of the library collections.

Zeolite product with its Clinoptilolite variety 83.3% may be a safe option for the interventions on the preservation treatments of the info-documentary collections kept in insalubrious environments from libraries, museums or archives because:

- it filters, blocks, retains and then removes in the medium of the intervention solution a multitude of contaminants specific to biodegradable collections from the uncontrolled library, museum, or archive environments;
- in the researches carried out within the conservation-research laboratory of „Gheorghe Sincai” Bihor County Library, Oradea, the product behaved very well in a mixture with special nanoparticles for the insalubrious places contaminated with fungi, bacteria and viruses.

Crt. no.	Characteristics/ Material composition	Values	Obs.	
1.	Mineralogic composition	Clinoptilolite	71% - 83.3%	
		Vulcanized glass	4.1%- 9.7 %	
		Plagioclase	6.6%-6.67%	
		SiO ₂	2.25%-2.6%	
		Other minerals	3.0%-4.0%	
2.	Chemical composition	SiO ₂	68.75 %	
		Al ₂ O ₃	11.35%	
		Si O ₂ /Al ₂ O ₃	5%-7%	
		Fe ₂ O ₃	2.10%	
		CaO	2.86%	
		MgO	1.18%	
		Na ₂ O+K ₂ O	3.99%	
		P.C.	9.77%	
3.	Apparent specific weight in dry state	1.650-1.75 gf/cm ³		
4.	Cationic exchange capacity (CEC)	1.6mqv/100g		
5.	Natural humidity	11-18% (according to season)		
6.	Specific surface (BET)	53.3 m ² /g for 125 microns		
7.	Pore volume for the natural product	0.224 cm ³ /g		
8.	Pore diameter	3.82A		
9.	Total porosity	33.08%		
10.	Water absorption	25%		
11.	Specific mass	2.15-2.25 g/cm ³		
12.	Bulk density	0.88kg/dm ³		
13.	pH value	9		
14.	Colour	White-gray		
15.	Smell	No smell		
16.	Cationic exchange capacity on calcium ions	90-110mqv/100g		
17.	Cationic exchange capacity on magnesium ions	7-14mqv/100g		
18.	Cationic exchange capacity on potassium ions	44-54 mqv/100g		
19.	Cationic exchange capacity on sodium ions	37mqv/100g		

Table 1. Zeolite - technical specifications

2.2.2 Presentation of Dolomite product for the conservation treatments of info-documentary collections

Micronized Dolomite (Calcium and Magnesium Carbonate) is a very important new technical way in which the product is processed to be accessible as a technology line for the conservation of the info-documentary collections. Promotion of dolomite as a sustainable technology for the intensive pH-value correction treatments of valuable collections on paper is a constant direction of the research program within „Gheorghe Șincai” Bihor County Library, Oradea, to use nanometric products by using the mechanical synthesis, products that offer new structures useful in protecting the info-documentary collections.

The main effects of using dolomite in preserving old newsprint collections are:

- correcting the old paper with acid reaction (pH between 4-5), at a neutral, slightly alkaline pH (7-8);
- beneficial effects on some chemical paper indices;
- fixing the text.

Crt. no.	Elements	M.U.	Percent	Observations
1.	Ca CO ₃	%	57.8048	PH Optimum values
2.	MgC O ₃	%	41.1103	PH Optimum values
3.	Al 2O ₃	%	0.0357	Subunitary value
4.	SiO ₂	%	0.1027	Subunitary value
5.	P2O ₅	%	0.0075	Subunitary value
6.	SO ₃	%	0.0170	Subunitary value
7.	Cl	%	0.0044	Subunitary value
8.	K ₂ O	%	0.0137	Subunitary value
9.	TiO ₂	%	0.1029	Subunitary value
10.	V ₂ O ₅	%	0.0013	Subunitary value
11.	MnO	%	0.0572	Subunitary value
12.	Fe ₂ O ₃	%	0.0760	Subunitary value
13.	CuO	%	0.0123	Subunitary value
14.	GeO ₂	%	0.0131	Subunitary value
15.	As ₂ O ₃	%	0.0381	Subunitary value
16.	Se O ₂	%	0.0111	Subunitary value
17.	SrO	%	0.0262	Subunitary value
18.	BaO	%	0.2806	Subunitary value
19.	Insoluble HCl	%	1.0840	

Table 2. *Dolomite - composition*

Concerning the composition of dolomite (*see Table 2*), the following aspects were highlighted:

- the variety of the studied dolomite contains a very high value of calcium carbonate (57.8048%);
- magnesium carbonate is 41.1103%;
- calcium and magnesium carbonate values are optimal in acid pH corrections treatments;

- all the identified elements, except for calcium and magnesium carbonates, present insignificant subunit values as an impact on the pH neutralization processes.

Dolomite: technical specifications

Dolomite is a mineral from the anhydrous carbonate group, commonly found in nature. The mineral crystallizes in the trigonal-rhombohedral system, having the chemical formula $\text{CaMg}(\text{CO}_3)_2$, dominating the rhombohedral crystals or the massive gray-white aggregates with colour variants that can range up to light brown. It has a relatively low hardness, between 3.5 and 4 with a density of 2.9.

2.2.3 Presentation of Diatomite product and its use in the protection (preservation and restoration) of documents from libraries, museums and archives

Diatomite is a siliceous sedimentary rock composed of stratiform rocks having a structure of 50% diatomic/ diatomite residues entrapped in a white yellowish-to-brown opalescent mass, brittle and rough to the touch with homogeneous texture and high porosity. The rocks are lightweight with low density. The silicon oxide material is chemically neutral, dissolves in water and presents microscopic forms of incipient or advanced crystallization. The fact that diatomite is used, among other things, as a filler in the production of different types of paper, was a solid argument, besides other qualities, for its use in wet treatments for the preservation of info-documentary collections in libraries, archives and museums. Diatomite is a siliceous sedimentary rock formed mainly from the remnants of the diatomaceous shells. Diatomite is a whitish rock formed predominantly (over 50%) of diatomic frustules contained in an opal mass. It is a light rock, ($G = 0.4 - 0.9$), friable and with high porosity (90%). It is frequently stratified and associated with clays, micrites, or Miocene age tuffs. The material structure, from which it is formed, is the chemically neutral silicon oxide which does not dissolve in water.

Diatomaceous earth represents an insecticide with a natural effect, being considered a future insecticide with natural effects by the specialists. The insecticide-like action of the diatomite product is physico-mechanical and not through contact or ingestion as it occurs in the case of the insecticides of chemical nature, which end up by the contamination of soil, plants, animals and human beings.

Compared to the conventional chemical insecticides, diatomite as a natural insecticide does not induce resistance and immunity to insects, making permanent the intact insecticide capacity for a long period of time. Some specialists assert that the physico-mechanical action of diatomaceous earth is explained by a microscopic feature that produces a negative electron flow that permeates the body of the insects and the anatomical destabilization of the chitinated exoskeleton, producing death by dehydration and drying.

In the practice of diatomite use in the protection of various closed or open environments, the specialists have identified that the insecticidal power of diatomaceous earth is proved by having a small amount of pyrethrin, which irritates the nervous system of the insects. This feature of diatomite offers a technical possibility of using the product in various combinations to protect the collections from libraries, museums and archives, including the application of wet treatments.

Diatomite is effective in controlling insects in libraries such as: cockroaches, coleopters, mosquitoes, flies, fleas, ants, spiders.

Crt. no.	Name - characteristic	M.U.	Achieved average values	Method of determination
1.	Loss when calcination, PC	%	11.89	STAS 1427-66
2.	Sulphur dioxide, SiO ₂	%	68.25	
3.	Aluminium trioxide, Al ₂ O ₃	%	11.17	
4.	Iron trioxide, Fe ₂ O ₃	%	3.3	
5.	Calcium oxide CaO	%	2.37	
6.	Magnesium oxide, MgO	%	1.65	
7.	Sodium oxide, Na ₂ O	%	0.65	
8.	Potassium oxide, K ₂ O	%	0.56	
9.	Titanium dioxide, TiO ₂	%	0	
10.	pH	-	8.5	Visual

Table 3. *Diatoms - technical specifications*

Authorized tests I.S.C. - laboratory group 1, authorization no.2613 / 04.10.2012

2.2.4. Method of research-development of the experimental device

For the development and application of the used research methods, there were mainly took into account the objectives pursued both in the laboratory experiments (Zeolite, Dolomite and Diatomite products in the final solution formation, as well as the concentration of the working solution), but also for the final tests on the library collections in the deposits.

Table 4 highlights the details for the elaboration of the experimental apparatus and the used research methods, as follows: objective presentation; period - experimental years; the location where the experiments, determinations and analyzes were performed; the contribution of the human factor - the research team; presentation of the variants, sub-variants and repetitions of the experimental apparatus in the laboratory, as well as the interventions regarding the use of the researched method, in the practice of preserving library collections at the library of „Gheorghe Asachi” Technical University, Iași.

1. OBJECTIVE. <i>Research on the use of the micronised product D.Z.D. (1: 1: 1) for the treatments on the deacidification of info-document collections from libraries, archives and museums in laboratory and storage conditions;</i>
2. PERIOD: <i>2016-2017;</i>
3. LOCATION: <i>Conservation-research laboratory within „Gheorghe Șincai” Bihor County Library, Oradea;</i>
4. PARTICIPATION: <i>Dr. Vasile. A. DEAC - „Gh. Șincai” Bihor County Library, Oradea; PhD stud. Ionela BURZ - Library of the University of Oradea Librarian Mariana IANUȘ - Library of „Gh. Asachi” Technical University, Iași</i>
5. RESEARCH VARIANT: <i>Use of D.Z.D. to carry out laboratory preservation treatments of FÁKLYA Newsprint Collection;</i>
5.1. RESEARCH SUB-VARIANTS - <i>FÁKLYA collection; years of appearance</i> - <i>sub-variant SV1: 1979;</i> - <i>sub-variant SV2: 1980;</i> - <i>sub-variant SV3: 1981.</i>
5.2. NUMBER OF REPETITIONS - <i>the terms of the studied years</i> - <i>Repetition 1: 1st term;</i> - <i>Repetition 2: 2nd term;</i> - <i>Repetition 3: 3rd term;</i> - <i>Repetition 4: 4th term.</i>
6. VARIANT OF USE IN THE PRESERVATION OF LIBRARY COLLECTIONS: <i>The use of D.Z.D (1: 1: 1) in the practice of preserving collections at the Library of "Gheorghe Asachi" Technical University, Iași</i>

Table 4. *Elaborated and applied research apparatus*

3. Scientific results

In this section, the results obtained through the implementation of the experimental apparatus elaborated and applied both in laboratory and, by professional extension, in the practice of carrying out the treatments for the preservation of library collections, are presented in detail.

3.1 Considerations about the sources and effects of acidity of info-documentary collections in libraries, museums and archives

Paper acidity (acidification): harmful factor expressed by the concentration of hydrogen ions in the paper mass that contributes to its degradation by turning to yellow or increased fragility; acidity is the main cause of paper damage (Deac, 2008). The mostly wide-spread sources of acidity are:

- acidity induced by some substances having an acidic chemical structure (rosin and alum, substances used in paper manufacturing);
- from the carboxyl groups produced either for paper bleaching (in the initial preparation of paper) or by the natural degradation of cellulose, caused to a great extent by the presence of heavy metals (iron and copper) in the material structure of the paper;
- from the aluminium sulphate used for the gluing with rosin and alum of papers manufactured after 1807;
- the presence of poor quality lignin and always in the newspaper paper, which break up in compounds that have a strong affinity for sulphur dioxide molecules;
- from the sulphur dioxide found in library locations, which is chemically converted into sulphuric acid in situ;
- a source of paper acidity is represented for a long time (1400-1850) by ferro-gallic inks, because from these inks prepared from ferrous sulphate, nut gall and Arabic gum, sulphuric acid is produced which is corrosive, causing paper punching in some serious situations;
- acids are formed in the paper by oxidation, as a consequence of natural aging, cellulose oxidation leads to the formation of carbon and carboxyl, which accumulate in the internal acidity that can be hardly removed by neutralization treatments;
- other oxidizing agent is the ozone, the acids may be formed by the absorption of acidic compounds from the air: sulphur dioxide, nitrogen monoxide, nitrogen dioxide, carbon dioxide;
- the occurrence and development of the paper acidity is directly proportional to the increase dynamics of the relative humidity's percentage values, especially when it is above 70%;
- the accumulation of paper acidity and the deterioration of cellulose through oxidation and hydrolysis reactions is all the more dynamic (faster) the higher the temperatures in the library locations;
- light is the direct physical factor involved in the photo-chemical processes of paper damage, as long as paper-based info-documentary collections are exposed to light even for short periods of time;
- the aging process (chemical degradation) of paper is greatly influenced by light due to metal ions, which act efficiently as photosensitizers for cellulose (iron oxide, zinc oxide, silver oxide, copper oxide), which means that under the influence of light radiation (the ions react efficiently in the presence of radiation with R-wavelengths less than 340 nanometers); these ions catalyze the cellulose decomposition reactions, which greatly intensify under the influence of the paper's moisture;
- the influence of biological factors (cellulolytic fungi and bacteria, papyrophages, xylophage insects, rodents) on the chemical degradation of info-documentary collections in libraries, museums and archives is known and verified in the practice of conserving info-documentary collections, because the biological agents produce organic acids (citric acid, oxalic acid),

enzymes or oxidizing agents that are catalysts of paper decomposition, as a result of the feeding metabolism;

- frequency of internal pollutants encountered in libraries, museums and/or archives: organic acids released into the rehabilitated and re-hygienized environments and deposits; Volatile Organic Acids released by the hardwood cabinets and raw wood boxes insufficiently worked and finished; sulphur and sulphur dioxide released by the rubber bands and gaskets used; the sulphur coming from Scotch-like adhesive tapes; nitrogen oxides released by the photographic negatives that have the cellulose nitrate as support; various harmful substances released by adhesives and fillers used in the manufacture of plywood and particleboards.

The main diagnosing symptoms of chemical degradation produced by the acids accumulated in the paper material structures are:

- the presence of incipient or developed yellow areas on the contact surface of the paper;
- the appearance of foxing points;
- oxidation and hydrolysis reactions on the paper;
- cellulose deterioration;
- photo-chemical reactions produced by the intensity and quality of the artificial and/or natural light source;
- cellulose damage by dislodging molecular bonds;
- paper aging;
- paper damage by changing the color of the material to brown (turning color), near the written area;
- paper turning fragile and information loss;
- appearance of paper oxidation points (black points of different sizes and shapes);
- chemical degradation of information due to the inks containing iron, copper and zinc: chemical agents affect the physico-mechanical resistance of paper; fiber size; fiber resistance; the interfibrillar surface of the fiber, etc .;
- acids affect the optical properties of the paper: colour, brilliance, opacity;
- acids affect paper stability, durability and permanence of the material.

Analyzing the incidence of factors (chemical agents) in the installation and development of info-documents' degradation in libraries, museums and archives, depending on the result of the action of favourable (activating factors) and unfavourable factors (inhibiting blocking factors), a managerial intervention strategy is presented in monitoring and blocking the activation factors (agents) of acids accumulated in the interfibrillar structure of cellulose:

- use of air conditioning equipment in library, museum and archive deposits;
- use of local air conditioning equipment;
- avoiding the entrance of external pollutants into libraries, museums and archives
- avoiding the formation of internal pollutants' sources;
- use of high quality paper - permanent paper;
- monitoring the evolution of the acidity in the case of info-documentary collections by conducting pH determinations (readings);
- carrying out treatments to neutralize the acidity of documents;
- carrying out prevention-eradication treatments of the biological agents from collections and locations;
- avoidance of photo-chemical degradation: choice of lighting sources; careful exposure of sensitive info-documentary collections.

3.2 Determination of the pH of the paper from liquid solutions - elaboration of the working methodology regarding the use of Hanna pH-meter

The conservation laboratory from „Gheorghe Șincai” County Library, Bihor, Oradea, uses a pH-meter of Checker - Hanna production with electronic display (photo 1) to determine the pH of the paper in liquid samples.

The first step is to remove the pH-meter protection helmet and connect the electrode to the measuring device. Then the electrode rod is inserted into the liquid sample (distilled water with pH 7, mixed with small pieces of paper) prepared in a laboratory tube. The contents of the test tube is slightly shaken. The electronic display is turned on and there are some moments of waiting for the display to stabilize, after which the indicated pH is read on the screen. If another analysis is desired, it is necessary to wash (rinse) the electrode in distilled water to minimize chemical contamination.



Photo 1. *Checker-type pH-meter, Hanna production, with electronic display*

3.3 Determination of paper's pH by surface determinations

Surface readings can provide useful information on the dynamics of acidity evolution in valuable info-documentary collections, although some problems can arise regarding the readings' value depending on the morphological (physical, mechanical and chemical) structure of the paper. Surface readings are performed with pH meters with electrodes that are technically adapted to operate in liquid media. This method, widely spread in surface readings on valuable documents, consists in placing the electrodes in contact with a drop of distilled or deionized water on the surface of the paper. Thus, a mini-solution, a mini-aqueous medium is prepared in which the electrodes act by direct contact.

Disadvantages of surface readings with special pH-meters:

- In some cases there may be encountered some problems with paper surfaces, being either very absorbent or non-absorbent. The absorbent papers will take up so much water that the electrode-water contact (solution) is always interrupted, with no stable pH that can be recorded. Adding more water to maintain the contact, large water spots may result that are difficult to remove, and the extract can be diluted so that the reading is erroneous.

- Repeated movement of electrodes for a direct contact with the surface of the paper causes the electrodes to be removed from the aqueous medium in which they are intended to function, and the readings carry deviations that sometimes are significant.
- In the case of papers that have a highly glued surface, they will not readily absorb water. Since water is not removed by paper absorption, a good electrode-water contact is maintained, which results in stable readings. But this reading may simply represent the pH of the bi-distilled water; in this case, the chemical process does not reflect the true value of the paper's acidity excessive absorption produces slight staining with excess dionised water, and insufficient absorption gives erroneous pH values.

Advantages of surface readings with special pH-meters:

- Surface readings, through direct contact with the paper, with special pH meters, are the only techniques agreed upon to monitor the acidity of valuable info-documentary collections.
- Surface readings, through direct contact with the paper, can provide useful information on the evolution of acidity expressed by pH units.
- In the case of modern, last generation pH meters, the hydrogen ion concentration meter can be connected to a PC (computer) to capture data online.
- pH/mV or temperature recordings (0C/ 0F) can be saved in document files and the data can be used in: operational analyzes; conducting evolution statistics of thr pH and temperature readings; displaying multiple documents on the monitor; customized features; plotting histograms (charts) of pH or temperature.
- If all installation, use and storage operations (after reading) are met, the special pH meters used for surface readings (through direct contact with the paper) provide readings that reflect the true acidity value of the paper.
- Calibration possibilities of the portable station with the contact electrode in standard pH solution (pH 4, pH 7, pH 10), by accessing the controls in an integral electronic system, eliminates measurement errors up to the standard value recognized by the authorized institutions in the standardization of paper acidity measurement operations.

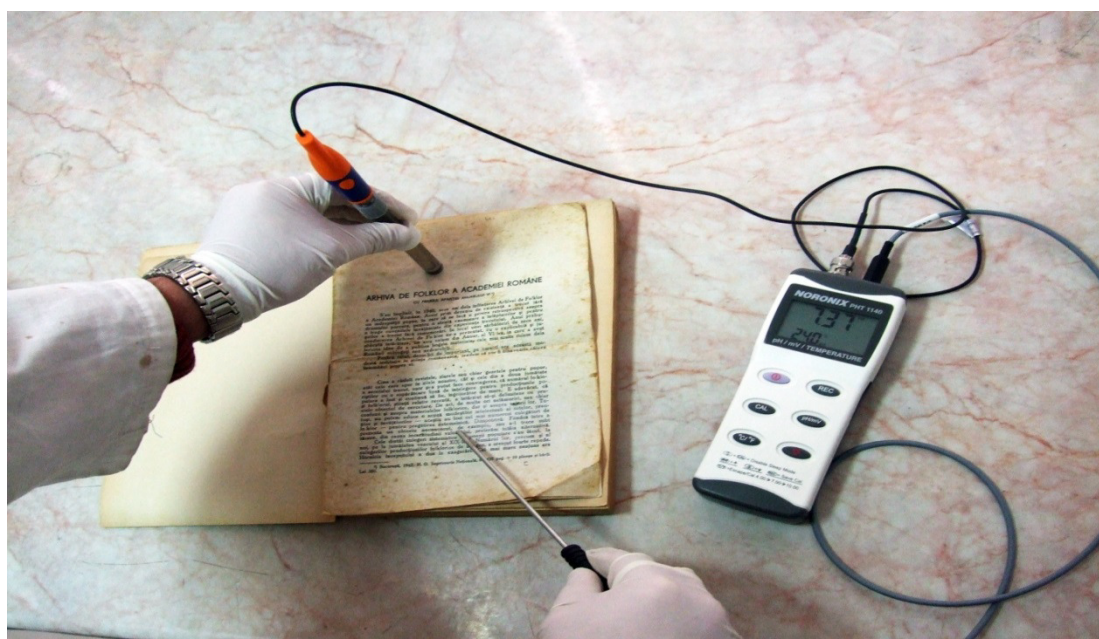


Photo 2. *Noronix PHT 1140 pH meter prepared for performing the acidity readings*

The conservation laboratory from „Gheorghe Șincai” County Library, Bihor, Oradea, uses a last generation pH meter for surface readings, Noronix PHT 1140 type, foreseen with: portable station with contact electrode for measuring acidity; electrode sensor for temperature determination (in °C/°F); RS 232 software for online data storage and processing (*see Photo 2*).

3.4 Researches on the evolution of pH values on the research variants and repetitions presented in the research apparatus; used product: Zeolit+Dolomite+Diatomite 2%

Regarding the reaction medium used to perform the deacidification treatments of the used document collections, the following pre- and post-treatment aspects were highlighted as follows:

- performing treatments on the deacidification of Fáklya newsprint collection, during the period 1979-1981, terms 1-4, represented a necessity to save the edited newsprint in the Hungarian language, which was in a state of precarious preservation due to inadequate storage conditions;
- the working solution developed and used to perform acid correction treatments was made up of the combined zeolite product - 70 gr. - to control the microbial flora at library locations + Dolomite - 70 gr. for the correction of the acidity of the paper, the hardening of the paper and the fixing of the text. + Diatomite - 70 gr. - for the protection of the paper structures from the attack of the paper insects;
- the combined product, which is the research variant, was dissolved in a 10 liter distilled water tank having a pH of 7.4;
- deionized water has not been used because it is acidic, being devoid of not only the harmful elements, but also of those necessary for the preservation of the newsprint documents;
- the reaction environment represented the final solution having a pH of 8.6 for wet interventions, by brushing the pages of each document on all components (double-sided);
- the documents thus treated were fastened with special clamps on a restoration string located at a height of about 2 m in the space of the conservation lab;
- the following aeration devices have been used for drying the treated documents: ICAF 2-M model special device for the aeration of the conservation and restoration laboratories; two space aeration devices;
- acidity determinations as well as the study of the dynamics and statistical processing of readings (about 500) by tracing the pH values, before and after the treatments, were performed with Noronix PHT 1140 pH meter;
- the graphs on dynamics and statistical processing of pH readings were highlighted in the annexes of the material.

As regards the achieved scientific results (*see Tables 5 and 6*), the following aspects have been highlighted:

- in Table 5, the evolution of pH values, on the research variants and the repetitions, was analyzed by using Zeolite + Dolomite + 2% Diatomite product in a reaction environment made up of distilled water with a pH of 7.4;
- the final value of the pH for the intervention solution was 8.6;
- the performed treatments fully justified the composition and effectiveness of the complex product D.Z.D. (Dolomite-Zeolite-Diatomite) in the preservation of documents by: neutralizing the acidity of the information carriers and bringing the pH to neutral values (6.9-7.2); eliminating the risk of degradation of information-bearing paper through preventive decontamination interventions with aspergillus-penicillin pathogens, and the removal of the

infestation conditions of Fáklya Newsprint Collection (1979-1981, 1-4 terms) with papyrophage insects, due to the fact that diatomite possesses a small amount of pyrethine (natural insecticide) that irritates the nervous system of insects from library environments (museum, archive); the observations made on a special magnifying glass on the treated documents reveal a restoration of the paper by neutralizing and washing the acidity points; the post-treatment status of documents by restoring chemical and mechanical indices, offer a new chance, if appropriate conservation and consultation measures are provided.

Regarding the definition and calculation of the neutralization index as well as the establishment but also the impact of the values as significance of INAD (Table 6), the researches carried out in the laboratory from Oradea, as well as the processing of the obtained data, represent an authentic scientific approach that offers a synthesis analyzed through the documents' acidity neutralizing indices and valorized by their statistical significance, as follows:

- the statistical model elaborated and applied in the deacidification treatments of the collections from „Gheorghe Șincai” County Library Bihor, Oradea, as well as from „Gheorghe Asachi” Technical University Library, is a useful working tool for finding and quantifying the usefulness and efficiency of the applied treatments;
- *Index of Documents' Acidity Neutralization (IDAN) (%)* represents the percentage of neutralization of free acidity in the newsprint paper, based on which the effectiveness of the performed treatment, the existing alkaline reserve and its equivalence with the incorporation of 2% CaCO₃ or MgCO₃, the homogeneity of pH distribution and the alkaline reserve of paper, the stage of acid neutralization inside the paper, paper pH (minimum, maximum and average value) can be determined;
- the interpretation of the results regarding the acidity neutralisation index of the documents treated on the research variants was performed by using the significance levels (Table 6);
- examples to use Table 6: for Fáklya variant 1979, first term, the average value of the pH for the untreated control document was 4.7; for the treated document the pH was 6.9; IDAN determination was made by dividing the treated pH value to the untreated pH, the result is multiplied by 100 (46.8-acidity neutralization index); the presented calculation mode is respected for all the work variants highlighted in the experimental apparatus;
- the analysis of Table 6 revealed IDAN values with a distinctly significant degree in the case of the nine terms, and 3 terms had a very significant IDAN;
- by analyzing the synthesis on the total experimental device (research variants and sub-variants - Table 6), the following values were obtained:
 - average pH value for the untreated documents-control variant: 4.6;
 - average pH value for treated documents: 7.05;
 - distinctly significant average value of IDAN (%) for treated documents: 66.92%.

*Researches on the Use of Micronized Product D.Z.D. (1: 1: 1)
in Laboratory and Deposit Conditions for the Deacidification Treatments*

Crt. no.	Document title and year of appearance	Term I						Term II					
		untreated V1			treated V2			untreated V1			treated V2		
		min (m)	Max (M)	Aver. (md)	min (m)	Max (M)	Aver. (md)	min (m)	Max (M)	Aver. (md)	min (m)	Max (M)	Aver. (md)
1.	<i>Fáklya</i> 1979	4.5	5.1	4.7	6.4	7.4	6.9	4.2	5.0	4.4	6.7	7.2	7.0
2.	<i>Fáklya</i> 1980	4.1	4.7	4.2	6.5	7.3	7.0	3.7	4.0	3.7	6.9	7.4	7.1
3.	<i>Fáklya</i> 1981	3.9	4.8	4.2	6.9	7.4	7.0	4.5	4.7	4.6	7.3	7.1	7.2

Crt. no.	Document title and year of appearance	Term III						Term IV					
		untreated V1			treated V2			untreated V1			treated V2		
		min (m)	Max (M)	Aver. (md)	min (m)	Max (M)	Aver. (md)	min (m)	Max (M)	Aver. (md)	min (m)	Max (M)	Aver. (md)
1.	<i>Fáklya</i> 1979	4.2	4.6	4.4	6.7	7.0	6.9	4.5	5.0	4.7	5.9	7.2	6.9
2.	<i>Fáklya</i> 1980	3.6	4.3	3.8	6.9	7.4	7.1	3.2	4.6	3.6	6.9	7.4	7.1
3.	<i>Fáklya</i> 1981	4.5	4.7	4.6	7.3	7.1	7.2	4.5	4.8	4.2	7.1	7.3	7.2

Table 5. Evolution of pH values on the research variants and repetitions; used product: Zeolite+Dolomite+Diatomite 2% (Oradea, 2017)

Technical data: equal parity combination between Zeolite 70gr + Dolomite 70gr + Diatomite 70gr 2% concentration; volume of used solution 10 liters; the reaction medium consisted of distilled water with a pH of 7.4; the final solution for brushing the double-sided document but also its washing if necessary, had a pH of 8.6; gripping display.

Crt. no.	Specification	pH average value for control document (untreated)	pH average value for treated document	Index of document acidity neutralization (IDAN) (%)	IDAN Significance (significance levels)	
1.	<i>Fáklya</i> 1979	Term I	4.7	6.9	46.8**	Distinctly significant value
		Term II	4.4	7.0	59.1**	Distinctly significant value
		Term III	4.4	6.9	56.8**	Distinctly significant value
		Term IV	4.7	6.9	46.8**	Distinctly significant value
2.	<i>Fáklya</i> 1980	Term I	4.2	7.0	66.7**	Distinctly significant value
		Term II	3.7	7.1	91.8***	Very significant value
		Term III	3.8	7.1	86.8***	Very significant value
		Term IV	3.6	7.1	97.2***	Very significant value
3.	<i>Fáklya</i> 1981	Term I	4.2	7.0	66.7**	Distinctly significant value
		Term II	4.6	7.2	56.5**	Distinctly significant value
		Term III	4.6	7.2	56.5**	Distinctly significant value
		Term IV	4.2	7.2	71.4***	Very significant value
Average values - significance		4.25	7.05	66.92**	Distinctly significant value	

Table 6. Calculation of the acidity neutralization index of the treated documents. Establishment of IDAN significances

Legend: Interpretation of results by means of IDAN significance levels (index of document acidity neutralization -% - according to the statistical weight of the pH value)

- 0... insignificant increase: 0-19%
- * significant increase: 20-39%
- ** distinctly significant increase: 40-69%
- *** very significant increase: 70-100%

4. Conclusions and Recommendations

Composite material combines in a single micronized product (3-10 microns) some qualities that are not naturally and individually highlighted.

The micronized Zeolite product is useful for the library collections kept in insalubrious locations to decontaminate library collections, modules and locations.

Micronized Dolomite neutralizes the acids inside the paper, provides an alkaline reserve necessary as a buffer system against acidity sources, contributes to the elaboration and application of mass deacidification processes of library info-documentary collections from libraries, museums and archives.

Diatomite, namely diatomaceous earth can be considered as the natural insecticide which can be used both in complex composite structures for the preservation of collections by the presence of natural pyrethroids that provide these characteristics and separately in solid form (powder).

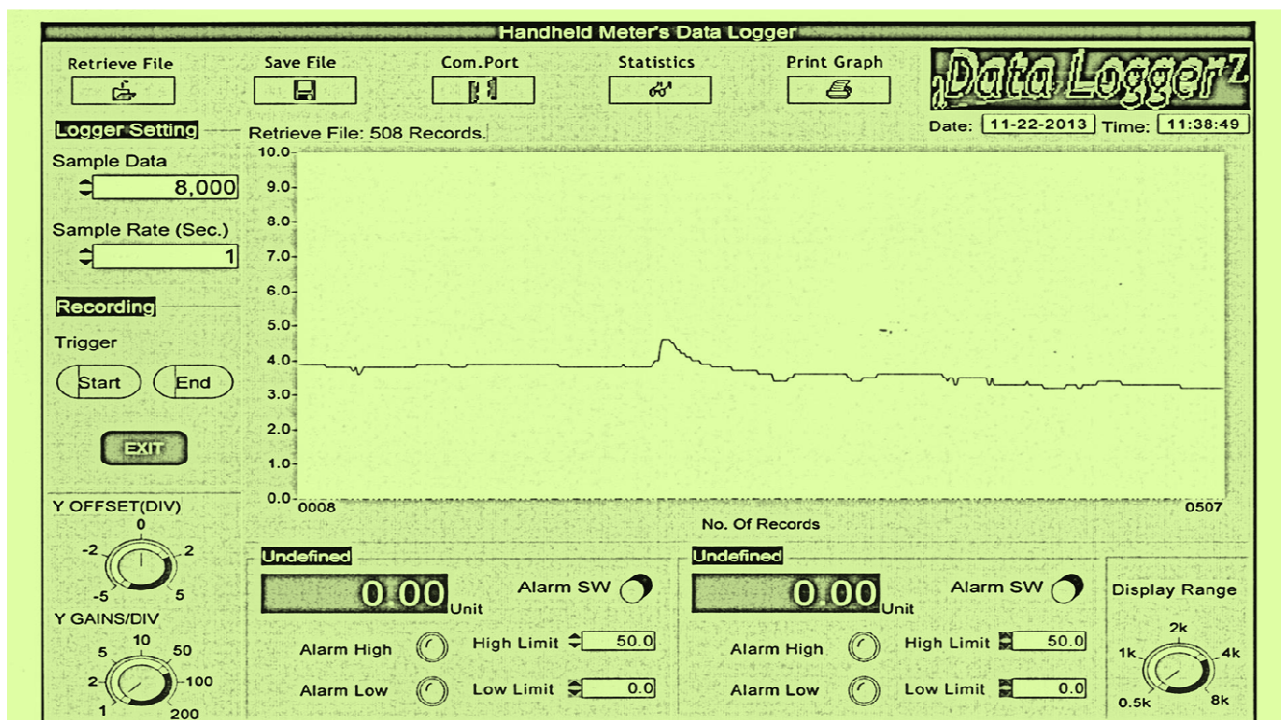
The usage of this 2% DZD composite for the deacidification treatments of Fáklya Newsprint Collection (1979-1981 - 1-4 terms) represented a new scientific approach in the Romanian literature and practice, which was effective in terms of low financial effort, but also because of its beneficial effects due to the treatment application: Index of Document Acidity Neutralization (IDAN) showed a distinctly significant average value of 66.92%; the average value of the pH for the untreated control documents was of 4.25%, and the average value of the pH for the treated documents was of 7.05%.

By using D.Z.D. composite product (1: 1: 1), the mass deacidification of the books can be performed without dismantling the binding of the books.

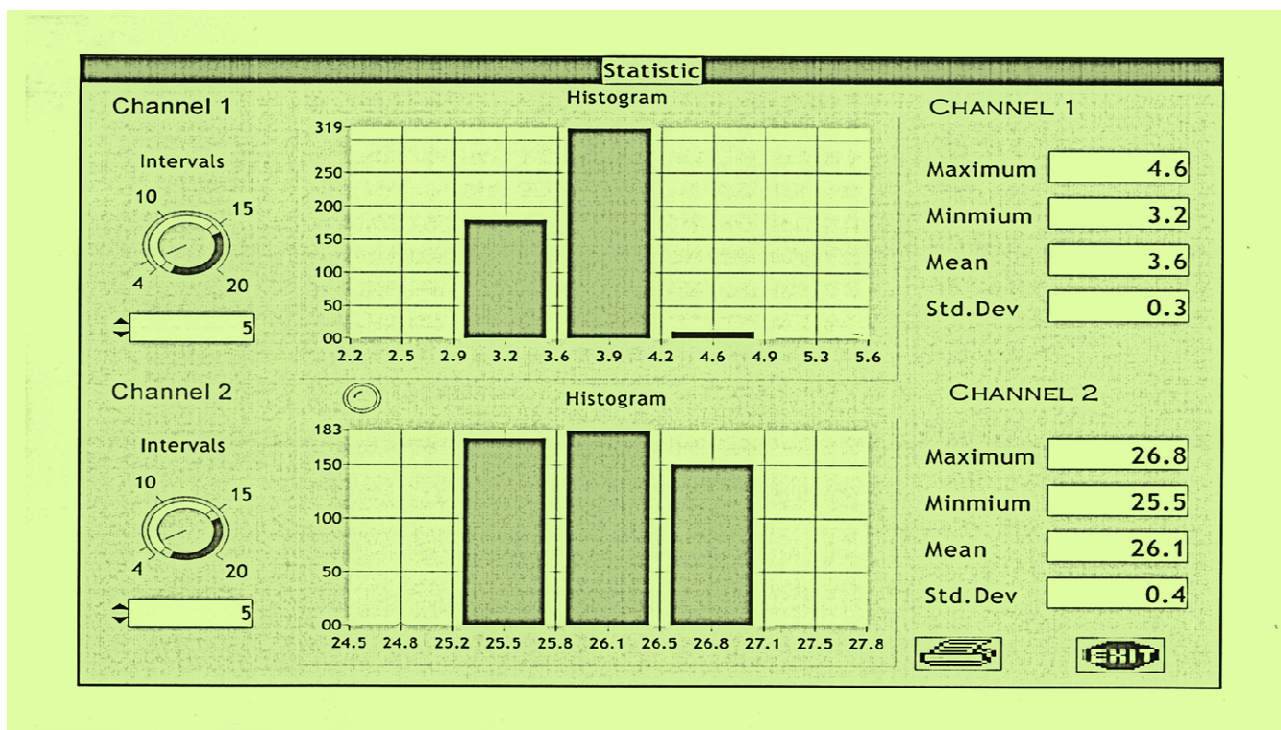
Criteria to be followed when performing deacidification treatments of collections by using D.Z.D. micronized product (1: 1: 1):

- purpose of treatments: neutralization of the paper's free acidity in order to extend the life of the documents;
- the natural product applied does not pose any danger to operators or users;
- neutralization of acids from paper must be complete;
- the pH should be between 7-8.5 to prevent acid or alkaline hydrolysis of paper and inks;
- D.Z.D. product must remain reversible over time;
- D.Z.D. product as well as laboratory or deposit procedures are compatible with environmental protection standards.

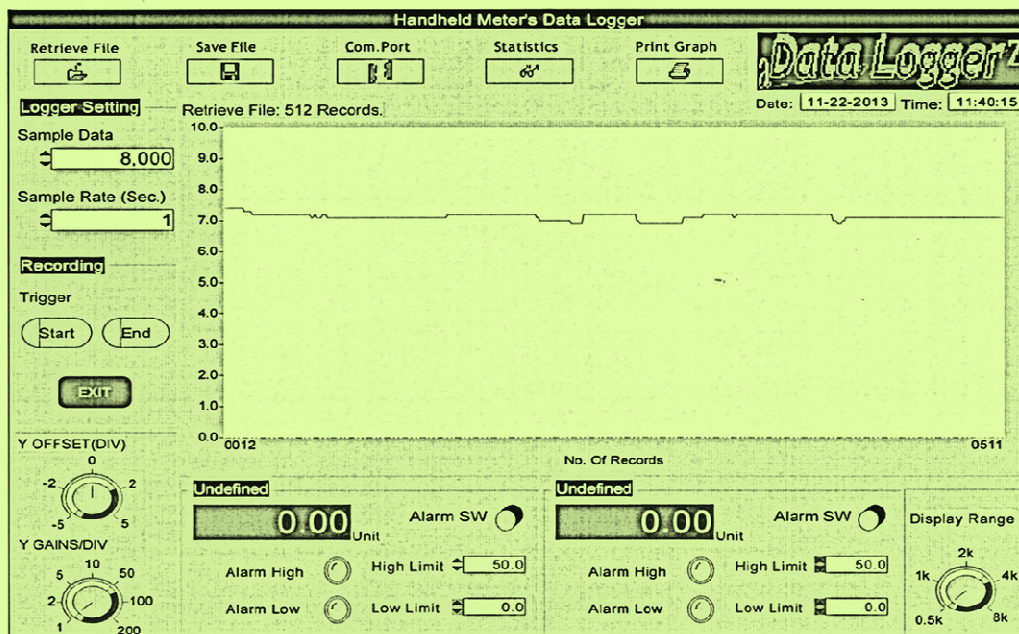
ANNEXES



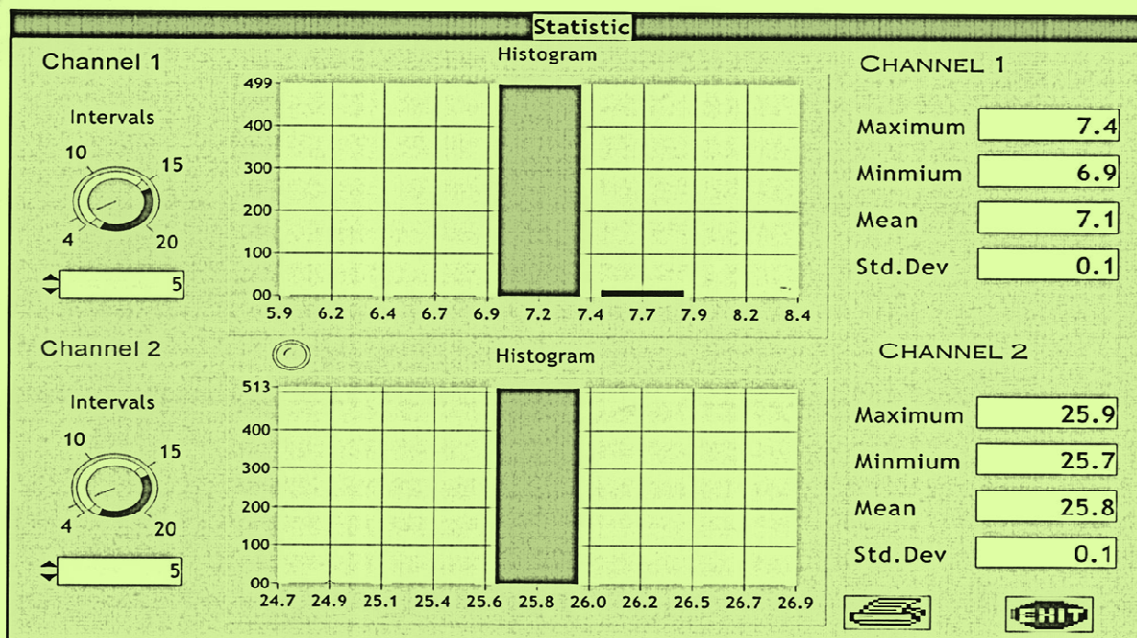
Evolution of the pH on the newsprint documents - graph plotting; „Gh. Șincai” County Library, Oradea. Făklya collection. Year 1980. Term IV. Research control variant VI (untreated)



Evolution of the pH on the newsprint documents - performing the statistical calculus; „Gh. Șincai” County Library Oradea. Făklya collection. Year 1980. Term IV. Research control variant VI (untreated)



Evolution of the pH on the newsprint documents - graph plotting; „Gh. Șincai” County Library Oradea. Făklya collection. Year 1980. Term IV. Research variant V2 (treated)



Evolution of the pH on the newsprint documents - performing the statistical calculus;
 „Gh. Șincai” County Library Oradea. Făklya collection. year 1980. Term IV.
 Research variant V2 (treated)

Notes

1. Dolomite-Zeolite-Diatomite (1:1:1).
2. Sizes of nano-particles between 1 and 5 microns, used in lab experiments, are considered as being the optimum ones for the usage of the nano-products in the preservation treatments of the info-documentary collections from libraries, museums and archives.

References

- Blanc, F. et al. (2007) Highly Active, Stable, and Selective Well-Defined Silica Supported Mo Imido Olefin Metathesis Catalysts, *Journal of the American Chemical Society*, 129(5), pp. 1044-1045, available: <https://doi.org/10.1021/ja068249p> [accessed 10.08.2017].
- Deac, V. (2009) *Conservarea colecțiilor infodocumentare din biblioteci, muzee și arhive. Simptomatologia complexului de degradare* [Conservation of infodocumentary collections in libraries, museums and archives. Symptomatology of the degradation complex], București: Centrul de Pregătire Profesională în Cultură.
- Deac, V. (2017) *Investigații privind starea de conservare a colecțiilor infodocumentare. Lucrări practice de laborator. Ghid practic de conservare* [Investigations on the state of preservation of infodocumentary collections. Practical laboratory work. Practical Guide to Conservation], [s.l.]: [s.n.].
- Heo, J., Hock, A.S. and Gordon, R.G. (2010) Low Temperature Atomic Layer Deposition of Tin Oxide, *Chemistry of Materials*, 22(17), pp. 4964-4973, available: <https://doi.org/10.1021/cm1011108> [accessed 11.09.2017].
- Hock, A. S., Schrock, R. R. and Hoveyda, A. H. (2006) Dipyrrolyl Precursors to Bisalkoxide Molybdenum Olefin Metathesis Catalysts, *Journal of the American Chemical Society*, 128(50), pp. 16373-16375, available: <https://doi.org/10.1021/ja0665904> [accessed 10.01.2018].
- Hock, A.S. and Schrock, R.R. (2007) Oxidative Reactions of the MoIV Dialkyl Complex [$\{(3\text{-CF}_3\text{C}_6\text{H}_4\text{NCH}_2\text{CH}_2)_2\text{NMe}\}\text{Mo}(\text{CH}_2\text{SiMe}_3)_2$], *Chemistry - An Asian Journal*, 2(7), pp. 867-874, available: <https://doi.org/10.1002/asia.200700093> [accessed 15.09.2017].
- Jula, R. (2003) Cercetări privind degradarea colecțiilor la depozitul general de la Biblioteca Județeană „Gheorghe Șincai” Bihor [Research on the degradation of collections at the general warehouse at the County Library „Gheorghe Șincai” Bihor], *Sănătatea cărților*, 2(1), pp. 38-40.
- Marinescu, S.C. et al. (2008) Syntheses and Structures of Molybdenum Imido Alkylidene Pyrrolide and Indolide Complexes, *Organometallics*, 27(24), pp. 6570-6578, available: <https://doi.org/10.1021/om800816q> [accessed 9.08.2017].
- Mălinaș, C. (2003) Puntea conservării (III) [The bridge of preservation], *Sănătatea cărților*, 2(1), pp. 1-3.

Public Libraries - Learning and Cultural Transfer Ecosystems. Case study: *Cultural Agora @ Your Library*

Ioana Crihana

Executive Director

National Association of Public Librarians and Libraries in Romania (ANBPR)

E-mail ioanacrihana@yahoo.com

Humankind Libraries - as territories of collective experiences - can serve as an infrastructure for testing and validating the new learning paradigms, while being, at the same time, the outposts for initiating different categories of target-groups by mentoring and coaching. Moreover, libraries have the potential to become vibrant spaces for broadcasting and for calibrating new relationship models next to best practices in innovation sprouting, in close connection with everyday life.

Via the Cultural Agora @ Your Library project, the National Association of Public Librarians and Libraries in Romania (ANBPR) has tested a set of modern technology-based tools and techniques whereby library users belonging to different ethnic communities became original digital storytellers on cultural diversity, with the aim of encouraging intercultural dialogue and of preserving multicultural values. ANBPR supports public libraries to become leaders in information navigation, by promoting the library as a dynamic space that inspires the discovery and the connecting of people from different cultures. The library provides always a lot of information, but it rarely provides creations of its own users.

Keywords: *library projects; library associations; digital storytelling; cultural dialogue; cultural diversity; minorities*

An inspiring experience of National Association of Public Librarians and Libraries in Romania in the cultural diversity field, with the involvement of public librarians and representatives of ethnic minorities

1. Introduction

The current society is based on increasingly refined methods of approaching knowledge and collaboration. We are at the core of deep resettlements generated by the phenomenon of migration and the multicultural interactions derived from this ethnic affluence that brings together people and professionals with very diverse cultural backgrounds. In Romania and in Norway alike, there is increasing interest in stimulating multiculturalism and the transfer of know-how among different ethnic communities. This integrative approach has made libraries be considered as collective spaces for testing and validating innovative content co-creation solutions, in the spirit of fostering cultural diversity and preserving the immaterial patrimony of ethnicities.

The National Association of Public Librarians and Libraries in Romania (ANBPR) wanted to capitalize on the experience of using digital stories, by turning the library into an aggregator of collective consciousness and multiculturalism. In this way, ANBPR proposes a new vision for managing cultural knowledge and the experience of public libraries, by proposing a transition from the library as provider of materials, to the library as a facilitator of materials produced by its users.

In 2014, the *Cultural Agora @ Your Library* project opened for ANBPR an unexplored territory - that of valorizing the cultural diversity of minorities, with the participation of public libraries. Starting from a daring and creative idea, the *Cultural Agora* has crystallized, in a 20-month

project-driven scenario, an innovative proposal to turn library service users into co-authors of collective memory by using the technique of digital stories.

The objective of this intervention is to promote the example of Romania-Norway collaboration in the field of creating original user content, using the public libraries infrastructure in Romania and Norway. The role of libraries as facilitators and multipliers of community-based good practice is becoming increasingly pronounced today. ANBPR-New Amigos collaboration creates the premises for new experiments in the field of multiculturalism, encouraging users from different ethnic communities to interact and create content themselves and introduce them to the general audience, to increase inclusion and quality of life through cultural education.

2. Cultural Agora @ Your Library project

This project is built on a partnership between Romania and Norway, in a consortium of the National Association of Public Librarians and Libraries in Romania - ANBPR, REPLIKA Cultural Association and Jazzmøntor AS Norway - an organization specialized in training and consultancy in digital stories field. The *Cultural Agora* project aimed at promoting cultural diversity, preserving the unchanged values of minorities, cultivating interethnic dialogue and stimulating collaboration between librarians and users, with the support of technology. This project was funded in the context of EEA Grants 2009-2014 PA17 / RO13 Promoting diversity in culture and art within the European cultural heritage.

One of the most fascinating processes of implementing such a project consisted in the manner in which initial ideas were propagated and reconfigured, i.e. by using them in different contexts, with the intervention of the several characters and personalities who put their fingerprint on implementing the project's creative scenario. *Cultural Agora* was more than merely a cultural experiment, it was an initiatory journey based on anticipation, collaboration, solidarity, but also on unpredictability, specific to dynamic projects, which re-invent themselves by every stage.

The *Cultural Agora* promise consisted in bringing to the attention of the public at large the heritage value of memory and collective consciousness, as well as in stimulating profane users to contribute to preserving the cultural values of different ethnic minorities. Via digital stories made during the *Cultural Agora* project, public libraries have become bridges between minorities and the rest of the community.

By the *Cultural Agora* project, rolled-out between January 2015 and August 2016, ANBPR has taken major steps in transforming public libraries into dynamic, vibrant spaces that encourage experimental discovery and the connecting of people to culture and art with the support of technology. Traditionally, the library is the space where knowledge, information, cultural landmarks, stories and experiences from very different sources are gathered and interfere. The public library offers a multitude of resources and information, but it rarely brings to the audience's attention original stories produced by its own users.

Over time, there have been several isolated initiatives to capture the stories and life experiences of users by using Digital Storytelling in Romanian libraries. But they were just local projects addressing a very limited segment of the audience, usually in a geographically well-defined space. However, ANBPR dared promote the use of digital stories via an innovative approach whereby the library becomes from a resource manager, a genuine facilitator for creating original user-generated content.

Thanks to *Cultural Agora*, users from 4 counties (Cluj, Sibiu, Braila and Bucharest) had the opportunity to produce and share their own stories, videos, texts, photos and to make known their own ethnic values and beliefs. Thus, libraries involved in the project - "Octavian Goga" County Library Cluj, "ASTRA" County Library Sibiu, "Panait Istrati" County Library Brăila and

Metropolitan Library of Bucharest - have turned into spaces of interethnic dialogue where digital stories have become innovative ways of preserving the unwritten history of ethnic communities and facilitating the exchange of knowledge and experience among library users.

The use of the Digital Storytelling method calls for artistic and creative skills as well as technical competences, a good knowledge of copyright issues, computer applications and audio-video editing processes. Participating in the Digital Storytelling training sessions within the *Cultural Agora* project was free of charge, based on enrollment, engaging people with different ethnicities, religious beliefs and especially with very different ages and professions. Via the complexity of the creative approach and the generous theme of the digital stories, the *Cultural Agora* project has provided extensive research on the cultural diversity of the 4 counties involved.

3. Results

In terms of project outcomes, in the context of the *Cultural Agora* project, the participants created over 1,500 digital stories of which more than 190 stories about the Roma culture, with the participation of more than 1,500 participants, including more than 500 ethnic participants, of which 230 Roma participants and more than 170 librarians.

The *Cultural Agora* project supported 4 libraries in Bucharest, Cluj, Sibiu and Braila to become community centers for digital stories. Relying on the free-of-charge workshops facilitated by librarian-trainers during the 20-month project, more than 1,500 library-services users involved in Digital Storytelling sessions have produced more than 1,500 original digital stories.

Moreover, the project supported the participation of members from various local ethnic communities (Hungarians, Germans, Turks, Tartars, Hebrew, Roma etc.). Based on the digital stories produced and collected, the 4 libraries organized temporary exhibitions of digital stories by using electronic equipment procured under the project (plasma, cameras, recorders etc.).

Librarians, together with the creators of digital stories, have also organized public debates in order to help create common cultural reflections in each library and strengthen the cultural "agora" emulation space. After organizing free-of-charge workshops, the digital storytelling with dramatic potential created by users has become the inspiration for an original theater show - In Your Own Words - which was presented in all 4 centers and which is currently included in the permanent repertoire of the REPLIKA Cultural Association. During the *Cultural Agora* project, a common portal on cultural diversity and identity in Romania was created, the project focusing on the specifics and the added value of the cultural heritage of minorities.

The participants to this project benefited from exposure to a professional working environment, access to international expertise and consulting, quality networking, access to technology, innovation and creativity, producing their own digital stories and media visibility through a multitude of channels and professional communication tools. Through Digital Storytelling, participants - library users and community members - have been encouraged to express and share their own creative ideas, write scenarios, edit photos, record and mix sounds by using the logistics available in the project. In the context of implementing the Agora Cultural activities, each of the 4 participating county libraries was equipped with five sets of laptops, scanners, recorders, cameras, as well as TV plasma needed to disseminate digital stories through permanent exhibitions.

From the perspective of the historical and symbolic value of the remembered cultural heritage, the images that illustrate the digital stories (in scanned or photographed format) also add value to participants' testimonials and stories, whether we are talking about vintage photographs, historical, cultural or family, icons, jewelry, furniture, musical objects, or any other architectural, clothing or even personal objects that are brought to the attention of the public at large.

4. Discussion and conclusions

By creating this audio-visual cultural repertoire of original digital stories in the public library, but especially by accessing it through permanent exhibitions, the library fulfills a mission which goes beyond the times, beyond the sentimental history of that geographic space and the local or personal legends. In this way, the library becomes the manager of a collective cultural treasure, meant to reveal to the next generations, the importance of local memory for the harmonious development of the community, while observing its history and authentic cultural values.

Thanks to this project, the library - as a main catalyst and message-bearer for the public at large - became an important vector in the exchange of cultural knowledge, with significant benefits for the consumers of culture and cultural education in general. By creating and disseminating collections of digital stories during the project deployment, the libraries involved have contributed significantly to the growing appetite for culture and the involvement of community members in the urban and rural socio-cultural life, by stimulating creativity, individual expression and personal skills development.

By creating a space for cultural emulation in the public library, the *Cultural Agora* project generated a massive cultural movement of attracting young people to culture, arts, community participation and cultural inspiration activities.

The involvement in the *Cultural Agora* project has generated a tremendous transformation of the participants, in terms of their acquiring knowledge in the field of audio-video, and the crystallization of collaboration relationship based on common values and the natural desire to share stories and experiences.

Via the Digital Storytelling workshops organized, the libraries involved have become authentic recipients of creation and learning. The value of this course is given by the original digital archive of stories that constitutes an extremely valuable patrimony of inestimable values, beliefs, habits and personal experiences.

In addition, participation in the *Cultural Agora* project generated a whole movement of recovery stories on cultural diversity. As a result of participating in the Agora Cultural workshops, library services users understood how important it is to become aware of their identity and ethnic specificity. All those who were part of the story: storytellers, trainers, mentors or simple spectators, overcame their fears, exceeded their limits and chose to be honest with themselves and with the others. Thus, the Agora story gallery has become a priceless collection of testimonies and experiences about culture and diversity.

The main change occurred at the level of perception. Thanks to the *Cultural Agora* project, several disadvantaged audiences in terms of social, geographical or ethnic affiliation to one group or another, benefited from access to technology, modern equipment, training and quality networking.

Moreover, via the project activities, an important capital of sympathy for stories and for cultural diversity was generated; the public's perception on cultural occupations was improved; the library as an opinion maker and facilitator of learning was promoted; and the offer of cultural institutions was improved due to the creation of a modern Digital Storytelling service for the community.

Cultural Agora has placed the Romanian cultural capital, quality education and innovative library services in the center of its concerns, in order to encourage the community members to participate actively to cultural life.

Currently, several cultural and artistic institutions, libraries and NGOs involved in culture and minorities' issues, media representatives and local decision-makers as well as central and local public institutions are among the partners and supporters of the *Cultural Agora* project.

Cultural Agora @ Your Library project has demonstrated that Digital Storytelling can bring about

favourable changes in the community, both in terms of acquiring new knowledge in the field of creative arts and technology, as well as in mobilizing different ethnic communities in the preservation of intangible cultural heritage.

On the other hand, the *Cultural Agora* experience has revealed to everyone involved the importance of collaborating and exchanging information, by using the public library infrastructure. It was an emulation of extremely beneficial ideas: we discovered incredible life stories and interacted with really surprising people. This project has shown us all that, regardless of social status or membership in one community or another, people have a particular appetite to share stories.

With the support of participating libraries, the *Cultural Agora* community has become a real treasure of humanity and of the critical thinking of several generations, an invaluable territory for the dynamic transfer of information, where community members have been successively the storytellers, the actors and the spectators of a diversity show, created and re-created in libraries just like in an authentic antique Agora.