Net-Interactive Documents (NID)

LIBRARY SYSTEM

Online Knowledge Management & Digital Publishing Platform

User Manual

NID Library

The Net-Interactive Documents (NID) library system is capable of using the inherently interactive nature of digital media. It enables material available in an information repository to integrate the innovations offered in today's online world. This next generation knowledge management system presents content beyond the scope of traditional books and documents. This content (audios, videos, infographics, discussions etc.) is exponentially increasing in online communities and can significantly add value to conventional digital documents and books. NID system also allows convenient mapping of multimedia annotations for self-use and for use in peer groups. The platform also allows users to conveniently send feedback and add discussions on every page.

The core philosophy at work behind the development of this new information management system was to develop a knowledge repository that is more open, interoperable, and reusable at both application and content level. To achieve this goal, at the application level, the system uses a modular service-oriented architecture approach. The system is comprised of components such as management system portal, library access portal, indexing system, imaging and Optical Character Recognition (OCR) engine, information processing modules and a database. The system architecture allows deployment of these components as separate service instances working seamlessly to create a comprehensive digital information platform. The responsive user interface design allows the system to be used on all major devices and operating systems.

To achieve interoperability and reusability aspect at the content level; the data in library is processed, stored and presented using International Image Interoperability Framework (IIIF) standard.

Work in Progress:

NID platform also makes use of artificial intelligence (AI) applications on the library data. The NID system is capable of running NLP algorithms, and utilizing open-source language knowledge models. This in turn is a first step to allow automated topic detection and interlinking of similar contents. The library can also make use of deep learning algorithms for automatic image object detection. More details on this are given in the Outlook section at the end of this document.

For updates and links related to NID Library, browse the following links

🌐 https://www.nid-library.com/Article/View/92

For a quick introduction to the system please refer to the URLs below

🇬🇧 Philosophy behind NID

🇩🇪 Das Arbeiten mit NID

NID Platform is created and copyrighted by "NID Management Team"

(An introduction to NID by Hermann Maurer)

🌐 https://youtu.be/jzs8XO3bkRg

Graz, Austria
August 2023

Contents

About this Manual

This user manual contains all essential information for NID users to make full use of the digital content management system. It includes a description of the system access, menus, functions, capabilities, and use examples. This document is provided for information only. The NID Team has endeavored to verify the completeness and accuracy of information contained in this document, but it does not take the responsibility for possible errors or omissions in this document. Therefore, the responsibility for the usage of this document or the results of the usage falls entirely upon the user, and the NID Team does not make any explicit or implicit guarantee regarding this.

What's in this Manual?

This user manual includes:

- Information how to access the digital content management system
- Features of the NID system
- Introduction to content organization, search and information filtering mechanisms
- Use of NID document view functions
- Annotations, discussion board and links
- User interactions (Articles, Groups, Quizzes)
- NID System Console Features
- Support Information

The main library portal provides access to the documents, associated annotations, links, media, discussions and articles added to the main content repository. The system can be accessed anonymously without logging into the portal; unregistered users will have limited access to freely available contents in the library with limited capabilities for searching and interacting. They can view (and add where allowed) the annotations and links to library documents for public view. Registered and logged in users of the NID library will have further access to contents based on their registration type and can perform advanced actions such as editing, adding and deleting of annotations, bookmarks, content sharing, advance search, citation, transclusion/sharing, group features, quiz management, creation and editing of articles, reviews, comments etc.

NID User Accounts

The table below shows different user roles available in the standard NID library system. Please note that a demo system may allow extended user right to anonymous users for the ease of testing.

Anonymous or unregistered users	A User can browse the main library portal without logging into the system. However, only public domain and limited contents (DRM-0 level) are presented to this type of user. This type of user can comment or can create/edit/view annotations in documents open for anonymous users. They cannot participate in marked quizzes and other group related function and advance features.
Registered User account	One can create a registered user account by completing the user registration form with a valid email ID. After verification through system sent email, the NID user account is activated. A registered user can view public/private/group annotations, can add book reviews and can add comments. The user has also access to full text search while browsing books (DRM-1 and below). They also have access to advance sharing and knowledge management functions such as topic detection and finding similar documents.

NID Editor users	An editor account has complete access to library contents, it can view, edit, and add information (annotations, wiki articles, reviews) on the library portal. The Editor users also have access to advance features of "Console" section of the main library portal where they can manage article/wiki collections, perform user group related functions, and have access to various user and annotations statistics. This user type can also access the administrative portal of the library system and can add documents with category and content related meta information such as DRM (Digital Rights Management (0/1/2) level of added books, Table of Contents, Author biography, title images etc.
NID Administrator users	The system administrator account has complete access to all system functions and contents of Library Portal. An admin user also has full access of the administrative portal. An administrative account, besides having full access to editor and user functionality, has additional access to system related settings, as well as user and group management. An Administrator account can add exclusive contents to the library (DRM-3 level) available only to system accounts. Admin users can create editor users and assigns document categories to the editors.

Login link is used to enter username and password to access NID library as registered user

For creation of premium access or editor user accounts please send Email to library Administrator for necessary action through administrative portal.
"Contacts" Page of the library portal contains the library staff contact details.
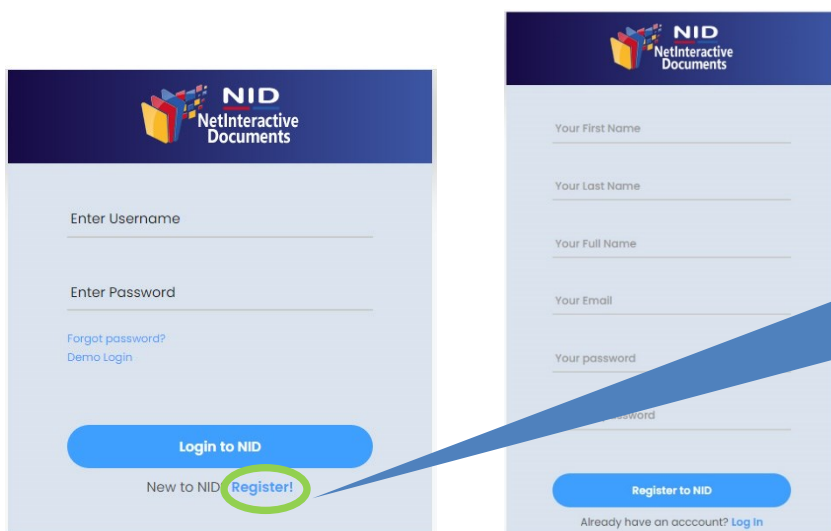
User registration is possible with a valid e-mail ID. Account is activated after confirmation email sent by the system is verified.

Figure 1: NID user login and registration options

For searching the meta data of contents in library. Full-Text option can be selected using the radio button. Result screen shows more advance search options to a user

WIKI/Article Collections in system

Login/Logout and User information

Links to newly added documents / contributions list and general system information

Library **console** menu, where user can add or edit wiki articles, create or manage groups, create or manage quizzes, send messages to group members in case of privileged access, can view user lists, annotation management, access to remote file system or can perform personal account management actions [Only visible when user is logged in]

Menu leading to important links and system language selection options

A carousel of featured documents selected randomly from priority groups

Quick Help and Feedback

Book/Document categories

Figure 2: NID Library main screen overview

The main library portal presents the available contents in the library to general users. The contents are presented organized in categories. The library categories are displayed on the main page as a grid of image tiles. This formation is dynamic, more categories and tiles can be added to the system and existing ones can be edited through the library administrative portal. Administrators and editors while adding/managing categories can set sort order number to adjust category image display place in the grid (please refer to the admin manual). The system also displays recently added documents or featured contents (specified in the administrative portal) in a prominent way as a moving carousel. The users can view documents in a feature rich document viewer and can make use of advanced search functionalities. The major user influx is through the library portal so it is only natural to allow the addition of supplementary content to the library through this channel. More details on the type of supplementary information and interactions are part of the following sections of this manual.

Documents organization and search

A user browsing the NID library can open a specific category to view the list of books in this category. The category page includes the listing of sub category tiles on top, in case subcategories are available. Alternately, a user can also use the comprehensive search facility of the library to locate desired contents.

Search input box on the main library page allow user to easily find documents based on their metadata i.e. document title, author names, editors publishers, and keywords. This is the default search method; a user can also select full-text option with radio button and extend the search to complete text of the document contents.

Figure 3: Main search box in NID library

A typical metadata search will show results with matching categories display at start of result listing followed by the
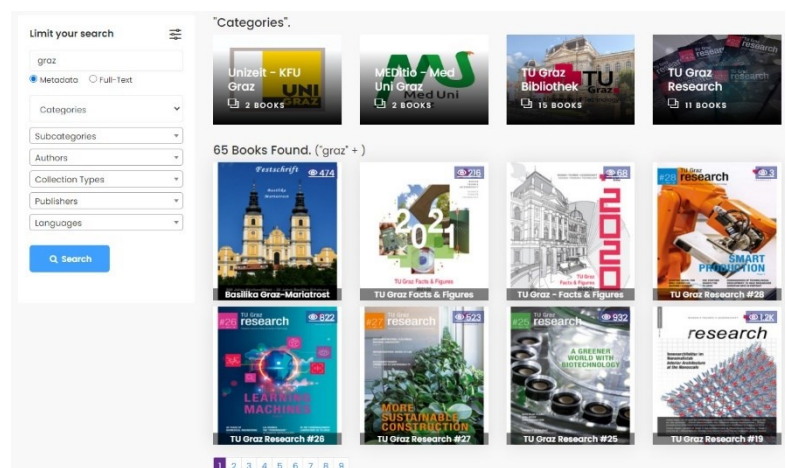
Figure 4: Metadata search results

image tiles and titles of matching documents. Users can click on the result items to view further.

In case of full-text search the results are displayed in a different way, each result item when accessed/clicked will show the page number and matching snippet of text inside a NID document. The result list (opened when a book icon is clicked in case of full text search) also provides links to jump to the respective pages in the document.
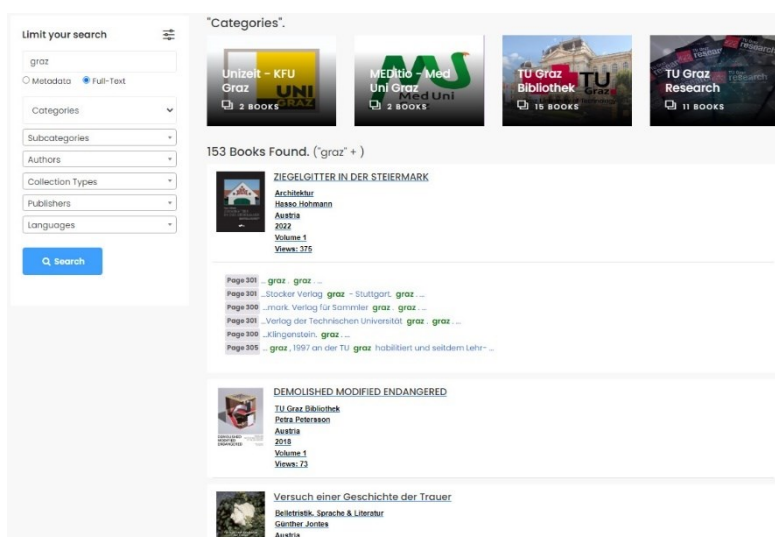

Figure 5: Full-text search results

The NID also offers faceted search facility, this means user can apply various filters to refine their search results.
The basic information content of the library, i.e., documents are organized in categories and subcategories. However, based on various other meta- data characteristics of content, a user can further apply faceted search filters on categories, authors, type of contents, publishers and languages. The application of search filters can be either on meta-data or on full text of
the documents. The faceted search allows precise access to information content of the library.
Full text search is facilitated by the Built-in OCR engine to extract text information from image-based


Figure 6: Advance search side panel, available in category page or available after basic search in main library. (outside book viewer)

PDF files as well. The NID search facility provides the use of wild cards, quotes, AND/OR operators. The full text search feature can also be accessed while browsing a book in the viewer. The search results also include automatically detected images in the book without having any text description. The automatic image caption index is only available for books processed using object detection function. For example, while viewing book at following URL https://www.nid-library.com/Home/ViewBook/127 users can search for "tie" or "person" or "bicycle" to find pages with pictures of such objects. (Inside document viewer only; image object results will look like)

Contents under a NID document category are presented in way that subcategory images and titles are displayed first. The documents are later presented in an order where recently added documents are listed first. Users can select from the drop-down sorting menu to organize the display order in a number of ways. In case of large number of documents inside the category user may move to next page of the category list.
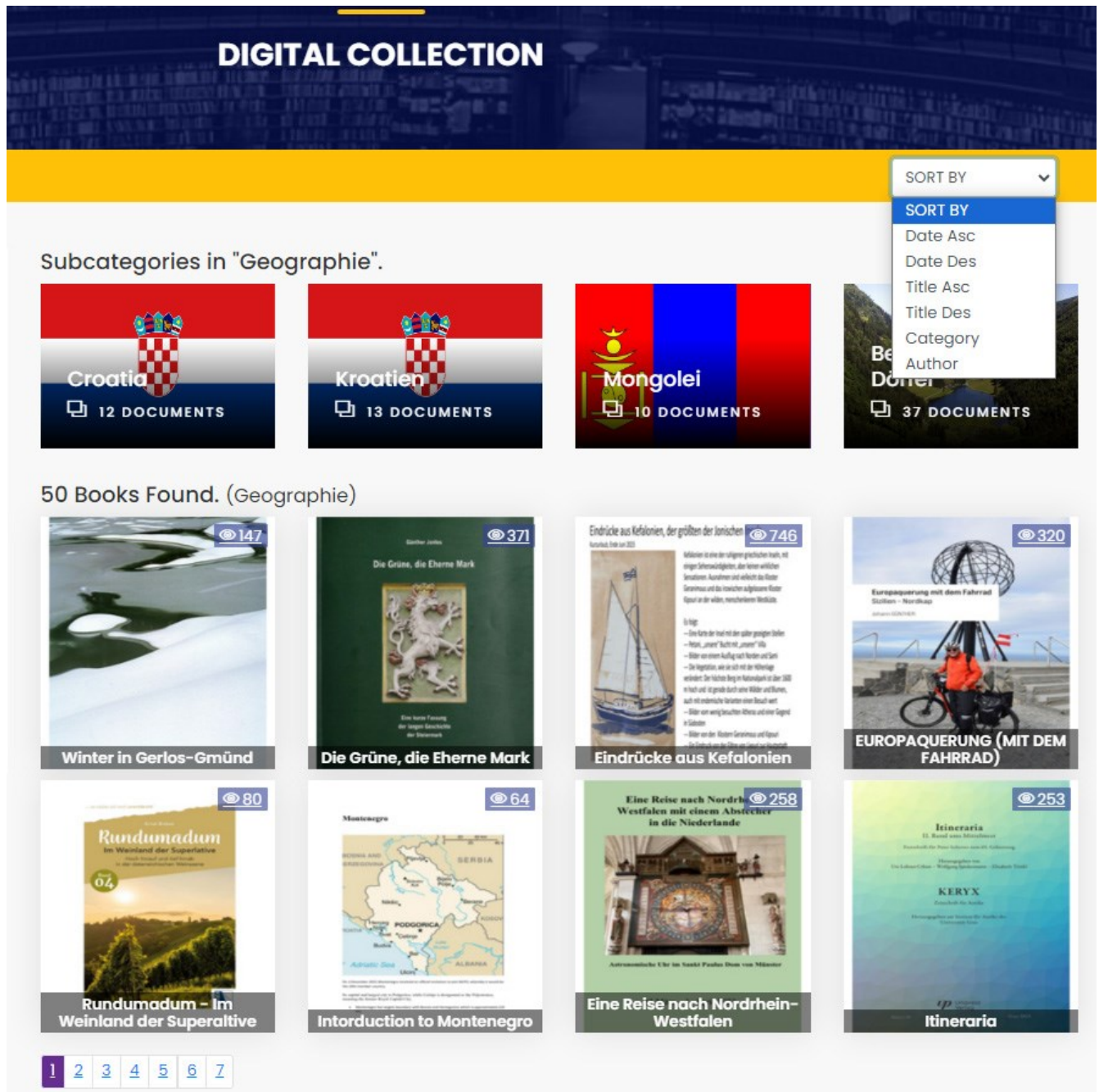

Figure 7: NID document category view

Document Detail Page

When a user selects a document to view, the details page presents the number of times the document is viewed and meta information about the document. The information includes among other data

- Title
- Number of times the document has been accessed
- Author/Editor (link to biography If available)
- Publisher, Volume, ISBN
- Country and Date of Origin
- Language, License type
- Number of Pages, Categories
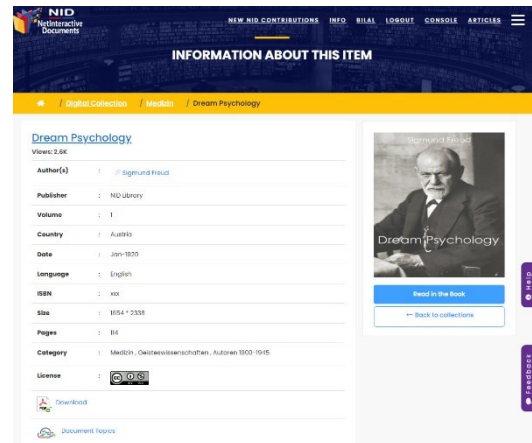
Figure 8: Document details page

Once a book link is clicked, the book detail page is opened providing further details about the selected book. Depending on the content license type, the book detail page may also show a download link of the source PDF file. The download link is available for creative commons or public domain license types. There is a link of document level topics cloud and associated links; this topics icon is only displayed in case the document is processed using topic detection feature by the admin/editor of the NID library. Users can also see reviews of the book that were added by the library users. Registered users with necessary rights can also add a personal review of the book on this page.

A user with administrative rights also sees the option to remove any inappropriate reviews added by users. A user has the option to view a selected book with the standard viewer with all the advanced book viewing, searching, annotation and interaction capabilities. The mobile device users will be redirected to the mobile viewer interface which is more suitable for small screens.

Dream Psychology

Views: 2.6K

Author(s)	:	Sigmund Freud
Publisher	:	NID Library
Volume	:	1
Country	:	Austria
Date	:	Jan-1920
Language	:	English
ISBN	:	xxx
Size	:	1654 * 2338
Pages	:	114
Category	:	Medizin , Geisteswissenschaften , Autoren 1900-1945
License	:	

Name Sigmund Freud
Email system@nidlibrary.org
Phone --
Biography Sigmund Freud born Sigismund Schlomo Freud; 6 May 1856 – 23 September 1939) was an Austrian neurologist and the founder of psychoanalysis, a clinical method for treating psychopathology through dialogue between a patient and a psychoanalyst. Freud was born to Galician Jewish parents in the Moravian town of Freiberg, in the Austrian Empire. He qualified as a doctor of medicine in 1881 at the University of Vienna. Upon completing his habilitation in 1885, he was

Sigmund Freud

Dream Psychology

Read in the Book

← Back to collections

Download

Document Topics

Content is currently occupied. Please try after some time.

Reviews

Bilal Zaka – Oct 05 2020 07:35 PM

In this book Freud describes several components of human dream. The dream work is the most significant one. Author describes that a person's unconscious desires will manifest themselves and shape their behavior while awake, and will influence the content of the dream while asl

Delete

Write your review below

B I ∂ U S̶   🖋 ˅ 🅰 ˅ A ˅ AI ˅ Aᵌ ˅   x² x₂

+ Add Review

Figure 9: Document details view, with meta data display, author information and book review

NID Document Viewer

Documents available in the library can be accessed via a responsive viewer interface using any modern web browser on desktop and mobile devices. The standard viewer presents contents in a variety of layouts options. The menu display modes of viewer are "Short Menu Mode", "Full Menu Mode" or a limited "Basic Menu Mode". The selection of how a document is presented by the viewer initially can be set using the "Manage Documents" section of administrative portal. By default a document added to the system is presented in short menu mode.
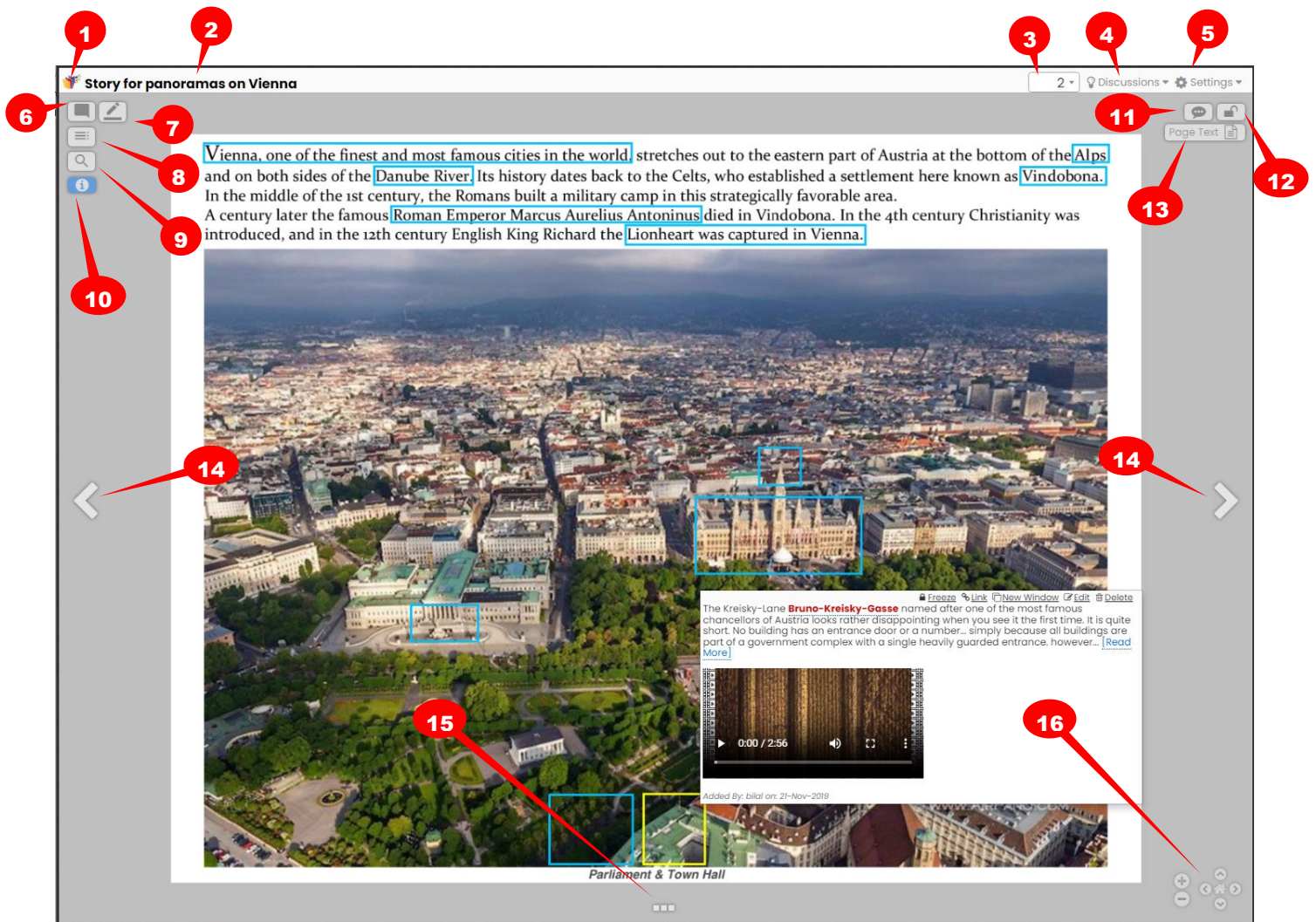
Figure 10: Short Menu Viewer in single page mode

To best understand, the different layout functions of the document viewer menu labels are shown in Figure 10 and 11 while details are given in Table 1.
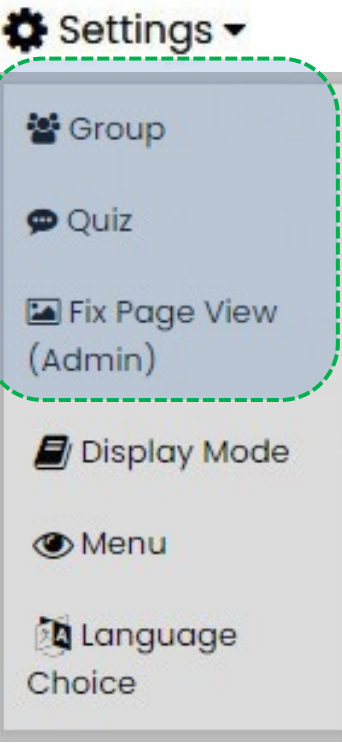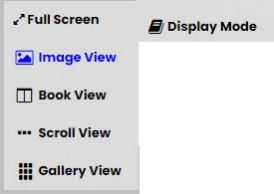
Figure 11: Full Menu Viewer in single page mode
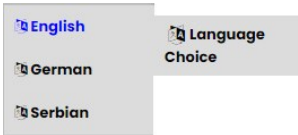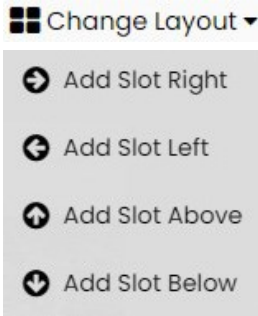
Each table item describes the function associated with different links/icons in both viewer modes.

Table 1: Viewer function description

S. No.	Description	Icon / Menu
1	Link to go to **Home Page** of library	
2	**Title** of the document; The Title when clicked will show the metadata of the library object.	[Title Text]

3	Current Page Number: User can input page number to jump to or can select a page from drop down list to load.	
4	The icon represents the discussions on current book page. It is colored blue in case a discussion thread exists on the page. On click a submenu appears with options to view discussion on that page and also lists the discussions on other pages of the book. A user can start a new discussion thread by "+ View Discussion" option. When an appropriate action is selected in the submenu it slides open a side panel with user discussions, comments, and links with a console to add more. Anonymous users can also add comments, while users with administrative rights can also remove unnecessary/inappropriate comments added by users.	
5	Settings menu presents users with a number of options related to viewer features the menu shows limited option in case of short menu while in full menu all options appear as shown in image placed across. These options include: **Group:** Select the type of annotations to display, default is public annotations. [Available to logged in users only] **Quiz:** Select the Quiz/Exams/Survey/Polls available to users; by-default only public quiz is enabled. [Quiz selection is available to logged in users only] **Fix Page View:** Allows privileged user to set page mode at a particular book location (Single page or two page book view) **!** Items highlighted above only appears in Full Menu mode **Display Mode:** Set the page view to **Full Screen** for maximum screen display. This will often make reading easier. Other modes include **Single Page/Image View, Double Page/Book View, Scroll and Gallery View** Change to the book page view type, default is image view, user can select book view displaying two pages in parallel, scroll and thumbnail views. However, features such as annotations etc. Are only available in the standard one page view. **Menu:** Select between a cleaner short menu or a more advance full feature menu of document viewer.	

	Language Choice: Select between available interface languages. Currently the system is available with English, German and Serbian translations. More options can be made available on demand.	English German Serbian Language Choice	
6	Annotation button can be clicked to show or Hide annotations layer on document page.		
7	Simple **Annotation icon**: The pen icon button is used to quickly add annotation on a page. Authorized user can add, edit or remove annotations, while anonymous users can only add annotations in documents that are allowed in administrative console for anonymous interactions.		
8	Display **Table of Contents:** The icon only appears if a document has an active Table of Contents (TcC). ToC is created when administrator considered it necessary. The creation of a ToC is described in the administrator manual		
9	Within document/book **Full text search**		
10	**Quick Help** Icon: This button shows quick tips about the NID library viewer interface.		
11	**Feedback:** This opens a quick feedback submission form		
12	**Login/Logout:** Open lock (logged in user) or close lock (logged out user) icon		
13	**Page Text:** It provides access to selectable page text. This icon only appears for documents that are processed with "Topic Detection" function in Admin Portal.	Page Text	
14	Forward and backward page navigation links		
15	Show / Hide page **Thumbnails** bar at bottom of page		
16	Within **page navigation**; allows zoom in and zoom out with plus and minus buttons. The 4-way navigation arrows allow page drag while home button reset to default view setting.		
17	**Change layout** of viewer to add more sources in same view. You can select the layout style and later add a source to populate a particular place holder. Users can add contents from different documents withing the same system/library or can load contents from other IIIF compatible servers.	Change Layout Add Slot Right Add Slot Left Add Slot Above Add Slot Below	

18	The **AI** function menu, when clicked presents a submenu with following options	
	Topics: It shows the automatically detected page topics/term tags. The topics presented in different colors and font sizes (as per occurrence frequency) are linked to similar topics found in other documents of the library.	
	(Data only available if topic detection is applied by the library administrator/editor to the document)	
	Object Detection: It shows image objects automatically detected by AI vision algorithms of the NID library. (if object detection is applied by the library administrator/editor)	
	When object Detection mode is selected, the page shows all the objects detected by the system. This information becomes part of search index and can be found if one searches for object labels. The object detection mode display only helps understand where/what object are detected.	
	ℹ The AI features are available in few selected books that are processed by library administrators for Object and Topic Detection at the time of book/document addition to the library. These features are for demo purpose and can be extended as per user requirements.	
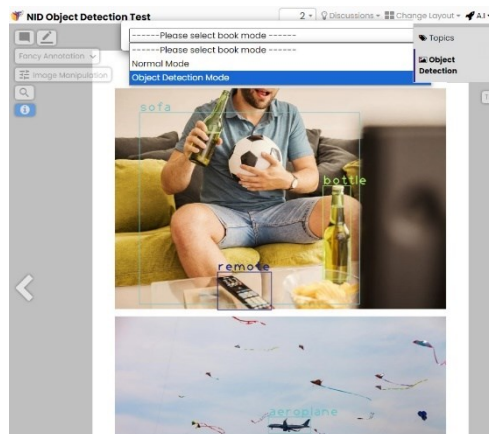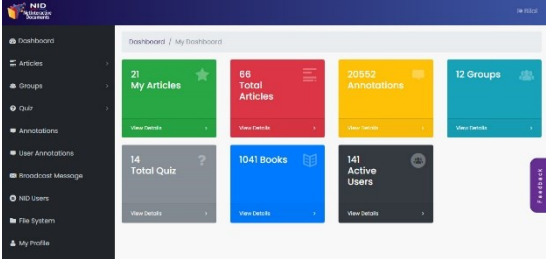
19	**Advance/Fancy Annotation Menu:** Annotations tools with more and less tool display option; by default public annotations will be displayed. User may hide/show annotations to view only original book contents by clicking the ▢ button. Initially simple annotation drawing tool ✎ is available for quick addition of annotations. In Full menu mode user may use the "Fancy Annotations" button to display more tool options. A tool box will appear with options to select round annotation markers, line-based markers, free hand markers, special annotation icons and options to change colors and marking line styles. (Examples are given in example sections ahead)	
20	**Image view and Page manipulation functions** i.e. rotation, brightness, contrast, saturation, grey scale, inversion, and mirror. User can also rest image view to default settings.	
21	Link to go to current **Book Details** page	
21	Link to library **Console** with a number of content and user management features. [Available to logged in users only] Console section features include, article addition/management, article category addition/management, Annotation lists, group functions (group creation/management, addition of Book Groups for access restrictions etc.) Quiz functions, user profile management, user lists, user messaging service etc.	
22	Generate **Citation** of current book page in standard formats.	
23	**Transclusion** support tool, it allows user to select a certain part of book contents and generate a link pointing to selected contents. This is a powerful tool that allows users to select contents manage their style and share within system or with systems and users across internet.	

The NID viewer also allows keyboard-based content navigation for user convenience. Following table shows available key-action information.

Key	Action
←	Go to previous page.
→ or Space	Go to next page.
Ctrl + ←	Go to first page.
Ctrl + →	Go to last page.
↵ Enter	Toggle full screen.

In Document Search

The NID viewer provides access to full text and image search (where available) facility in its side panel menu. Figure 12 shows full text search results within a particular book. Figure 13 shows that text in images is also indexed (!) for search in NID library system. This feature is not commonly available in standard library systems maintaining text only index.
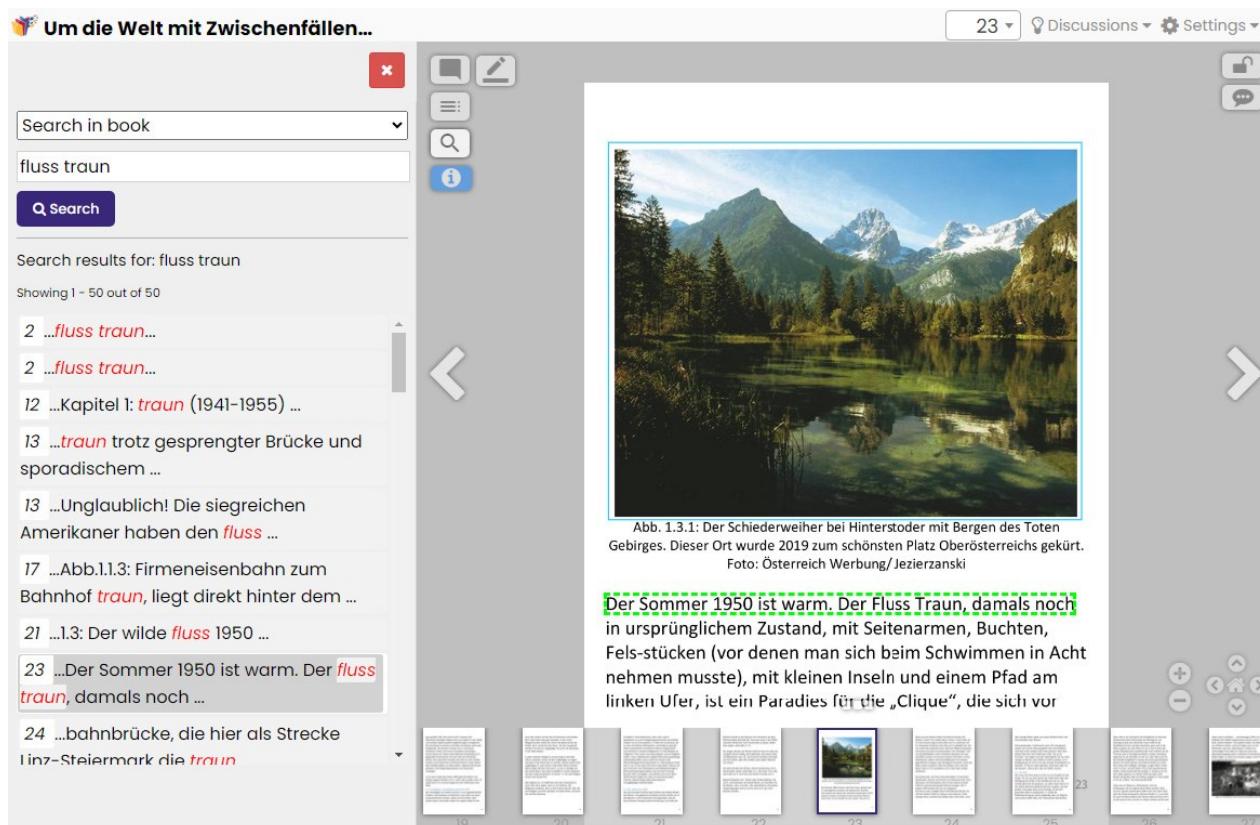
Figure 12: NID document viewer search with result highlighting
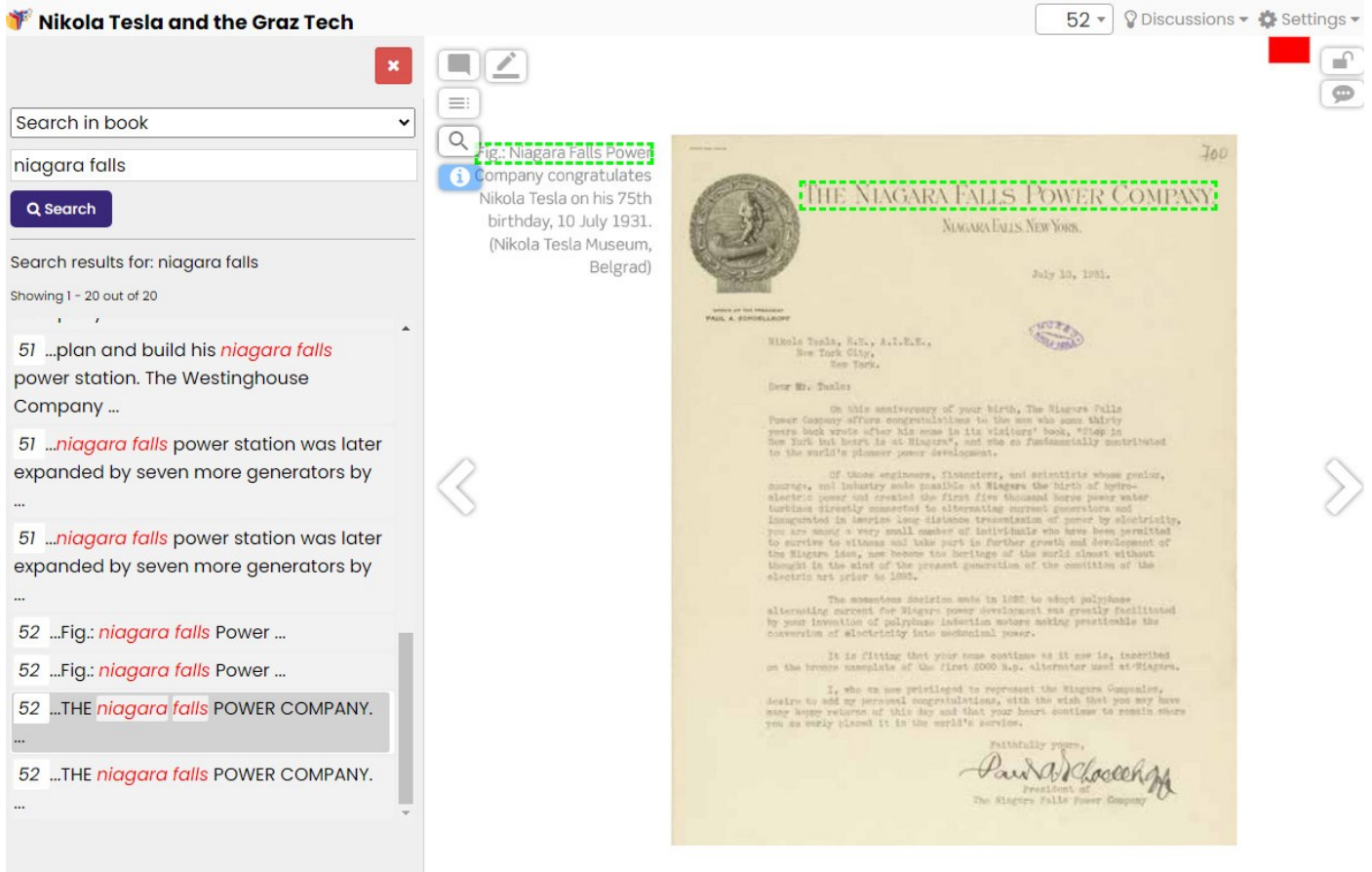
Figure 13: Search results for text inside an image of library book

Furthermore figure 14 shows the system's capability to detect and index objects for search which have no associated text. The example in picture shows that user searched for term "book" it showed multiple found instances in document and search results listed for page 14 have sign representing them as image object instances of term "book".
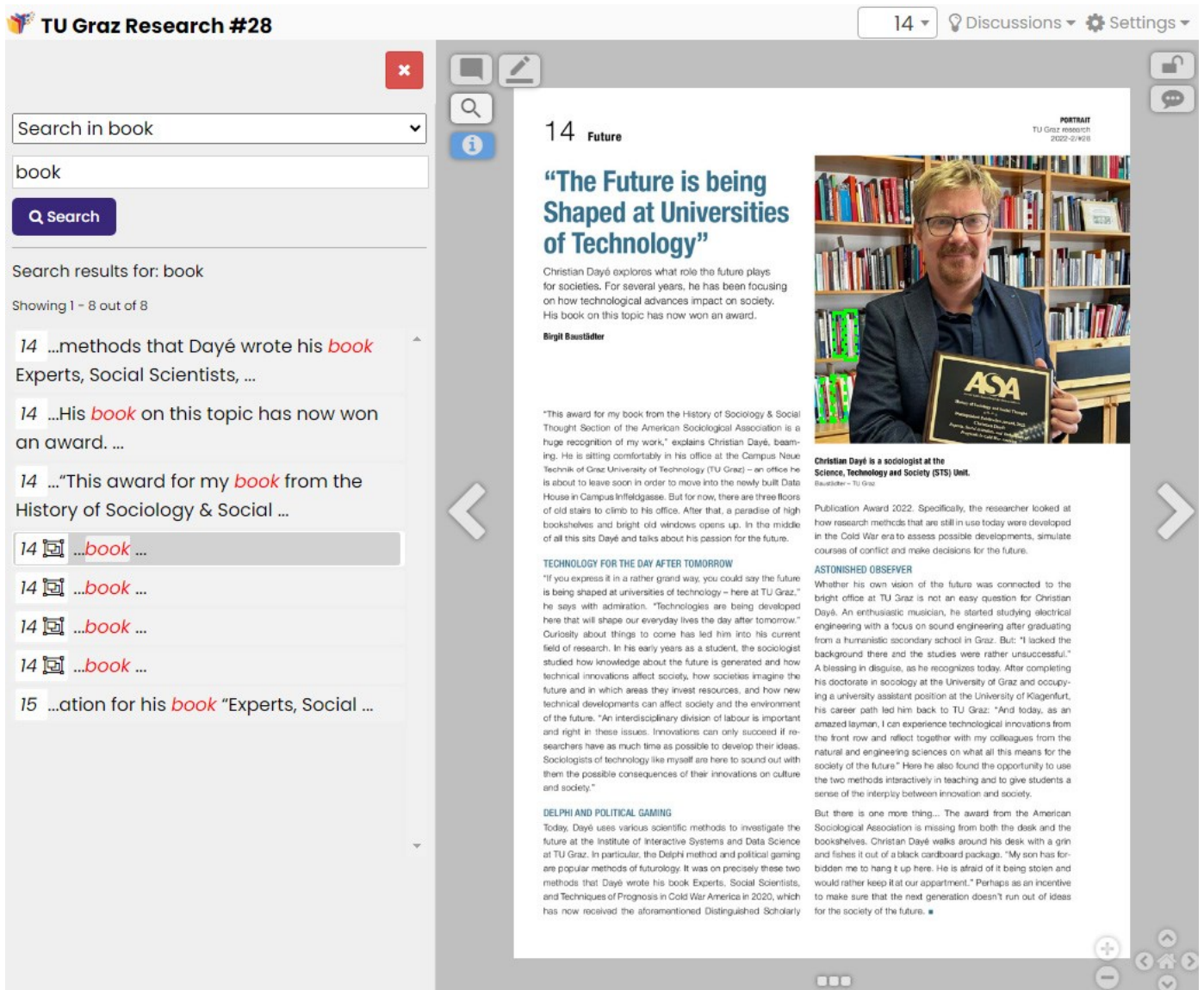
Figure 14: Search results of automatically detected objects in book (having no text captions)

The object detection feature is only available in documents where object detection is applied and document is re-indexed afterwards. The default system uses a pre-trained object detection model with limited capabilities of approximately 80 object class detection. For specific needs special training models can be used to detect domain specific image objects.

Document contents views

The NID viewer offers a variety of ways to view the page contents of a document. A user can select single page mode, book/ two-page mode, scroll or thumbnail views. However, certain features (annotations) are only available in the standard one-page view.

Figure 15: Two page book view mode

Page Image Manipulation

The powerful image manipulation features allow a user to change book content views at run time. The content view change feature includes rotations, brightness, contrast, greyscale, invert and mirror controls. Using the last icon in tool bar user can restore the image to its original form.
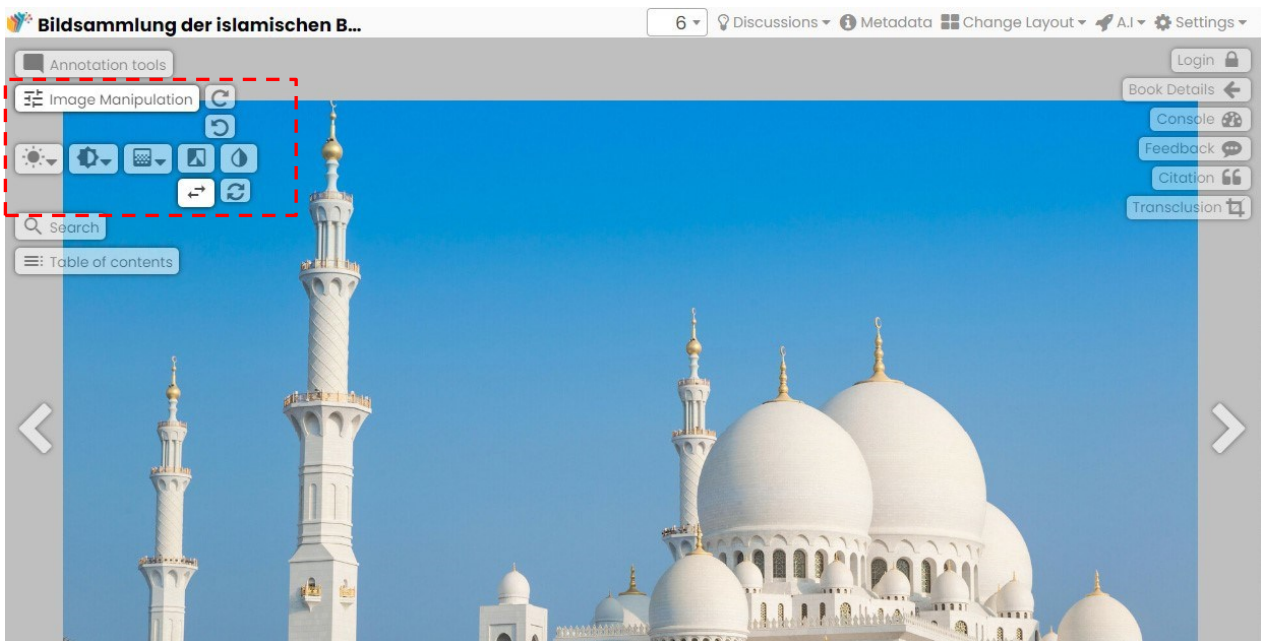
Figure 16: NID view manipulation tool bar

Change layout Options

The NID viewer allows users to add a separate view panel where a user can view other book pages alongside. This feature allows convenient comparison of contents, e.g., the same book translated in a different language. Example in figure 17,18, and 19 highlights how this is done

Figure 17: Adding a space in view panel to load another book source

Figure 18: Search and selection of book source to load in new/additional viewer panel

Tina und Amir

Episode 1: Der Spielplatz (erzählt von Tina)

Heute sprachen wir über Kinderrechte. Unsere Lehrerin erklärte uns, warum Kinder ihre Rechte kennen sollten.

Dann gab sie jedem von uns eine Karte. Auf jeder war ein Bild, und dieses zeigte eine Situation mit Kindern. Darunter stand jeweils ein Artikel der Kinderrechtskonvention.

Wir lasen den Text gemeinsam laut vor, zum Beispiel stand auf einer Karte: „Du hast ein Recht auf Privatsphäre" und auf einer anderen „Du hast ein Recht auf Nahrung, Kleidung, einen sicheren Ort zu leben und auf Sicherung deiner Grundbedürfnisse" oder „Du hast ein Recht auf Spiel und Erholung".

Es gab viele Karten. Dann las jeder von uns einen Text laut vor und wir sollten entscheiden, über welchen Artikel wir sprechen.

Unsere Lehrerin sagte: „Bitte entscheidet euch, über welchen Artikel ihr zuerst sprechen wollt und begründet eure Entscheidung."

Die meisten Kinder wollten über das Recht auf Spiel sprechen. Dann bat uns unsere Lehrerin, von unseren Erfahrungen zu berichten.

Tina and Amir

Episode 1: The Playground (told by Tina)

Today we talked about children's rights. Our teacher told us why children should learn about their rights.

Then she gave each of us one children's right card. On each card was a picture and it showed a situation with children. Below was a line with one article of the rights of children.

We read the text together aloud, for example there was one card that said: "You have the right to privacy." Other cards said: "You have the right to food, clothing, and a safe place to live and to have your basic needs met." Or "You have the right to play."

There were many cards. Each of us had to read one card out aloud. Then we had to decide which article we wanted to talk about first.

Our teacher said: "Please decide and then write down your reasons for choosing it."

Most children wanted to speak about the right to play, and so the teacher asked us to talk about our experiences.

Suddenly Vanessa got up and said: "Something that happened yesterday just came into my mind! We went to the playground that belongs to our neighbourhood. My friends and I

Figure 19: Viewing two content sources in parallel

Content sharing, Transclusions and Printing

The NID book viewer offers an option to select a page or a section of page for external sharing and printing. The selected content for sharing can be adjusted (size, rotations, color setting) and shared with anyone or any system using the generated URL. This type of partial content sharing links can also be created among the NID documents for internal use (as annotations) besides external sharing.
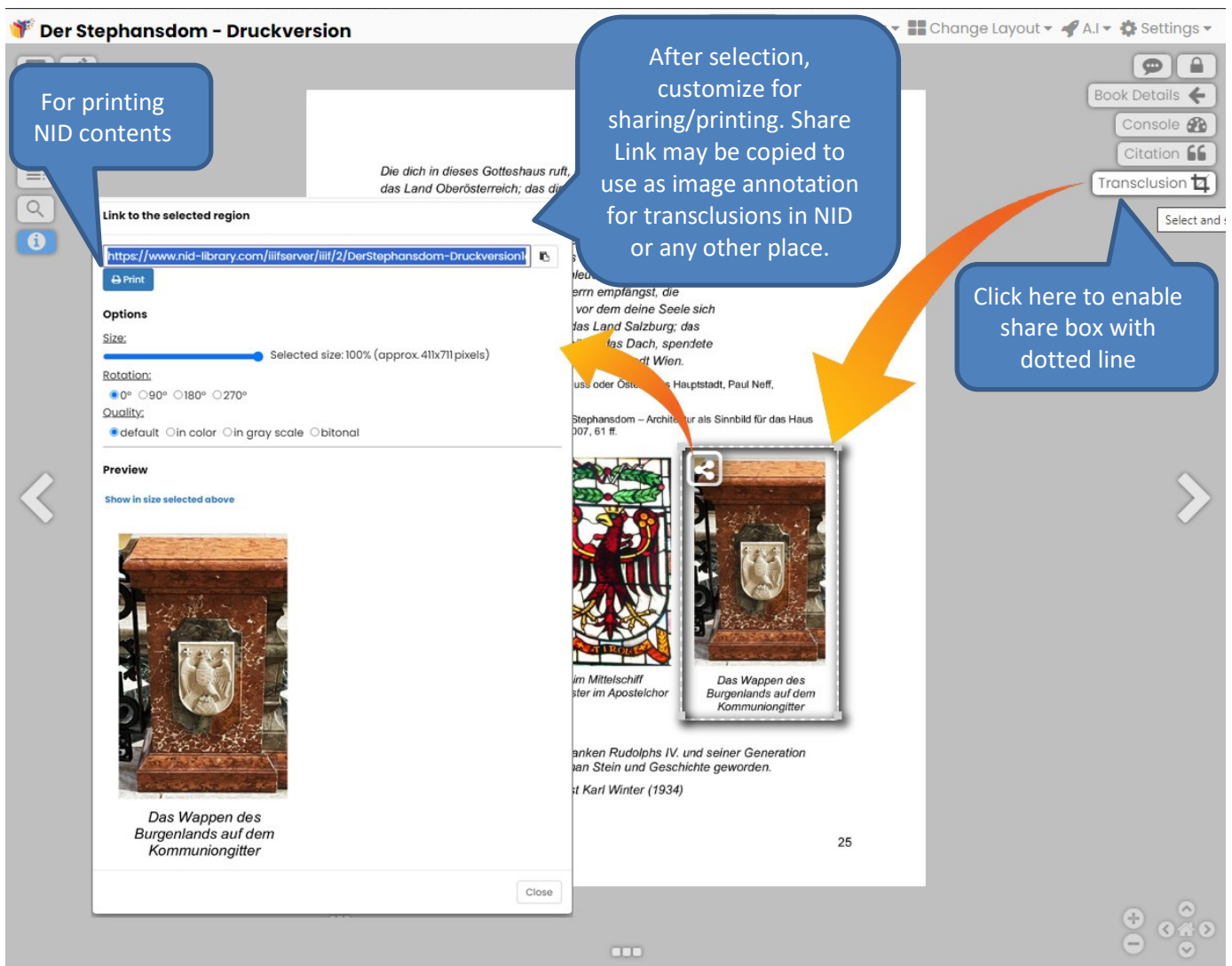
Figure 20: Selecting, sharing and printing NID document contents

Citations in NID

The library also offers the facility to generate citation of document or its specific page for further use. The citation is generated using standard formats practiced in academic and technical writings.
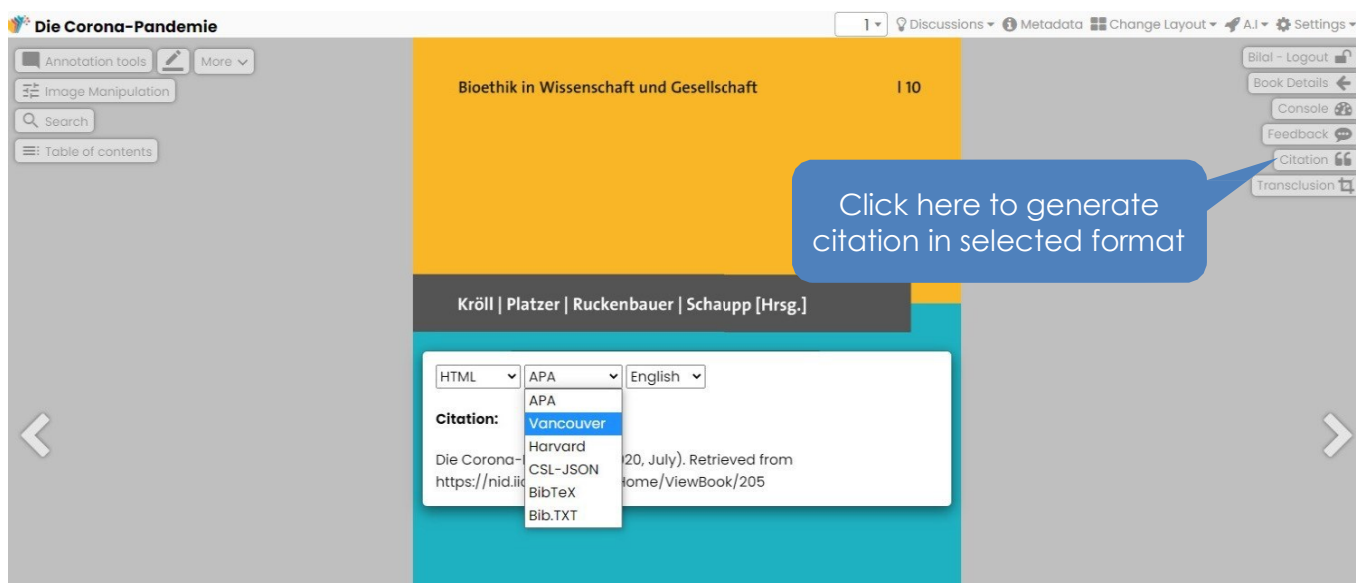
Figure 1 Figure 21: NID Citation generation

Page view setting

NID users can set page view mode at any document location to single page or two pages mode. This feature helps automatically adjust view type of pages that are best presented in book/two pages view mode, e.g. images spanning over two pages, or pages with linked contents.
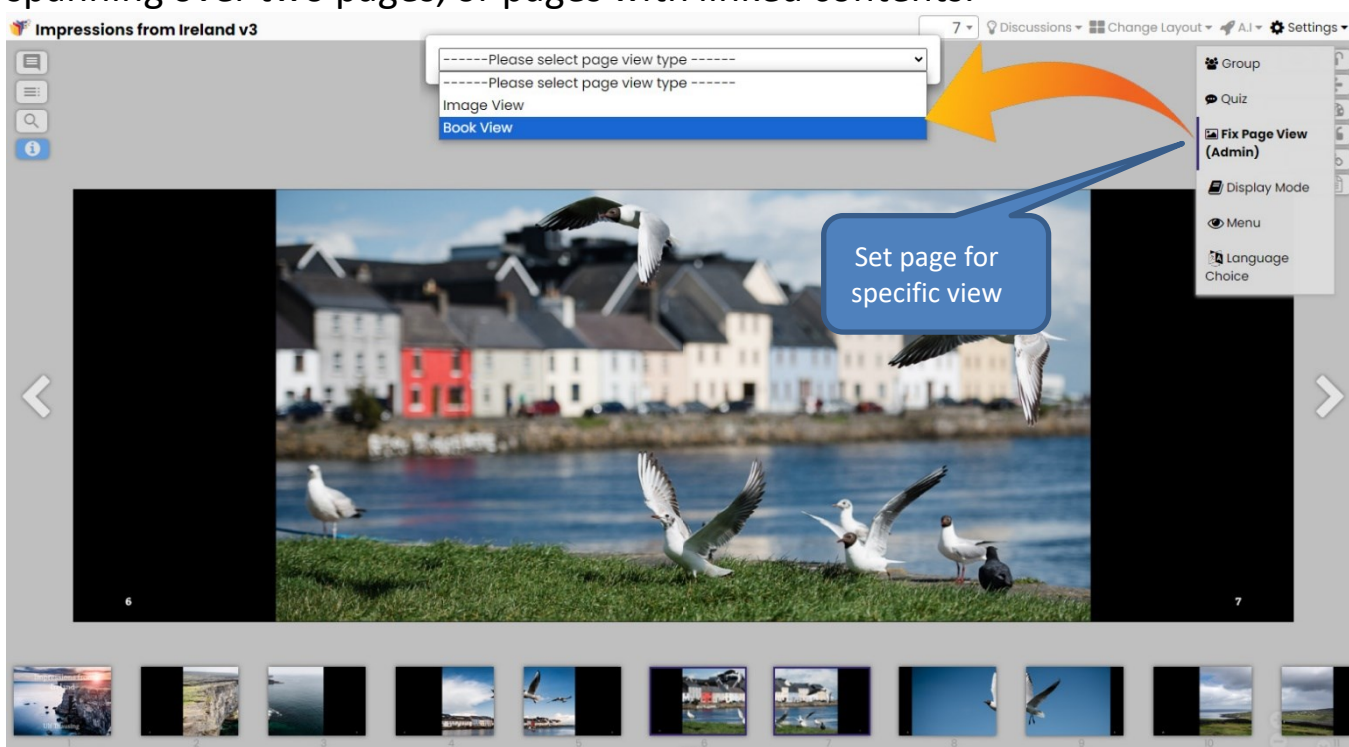
Figure 22: Page view settings

Document Discussion Board

Any user browsing a document can leave a comment related to page contents or participate in an ongoing discussion. The linked discussion forum can be opened by clicking on the "Bulb" icon on horizontal document viewer menu. The bulb icon will turn blue to indicate if the page discussion board contains any existing post. The opened submenu also contains the list of other discussions available in the same book. Anonymous users are also allowed to post comments, while users with administrative rights can delete and edit inappropriate posts. A logged in user can also select "Group" option from "Settings" menu before making posts in the discussion board. Posts for set user group will only be displayed to the members of a particular group.
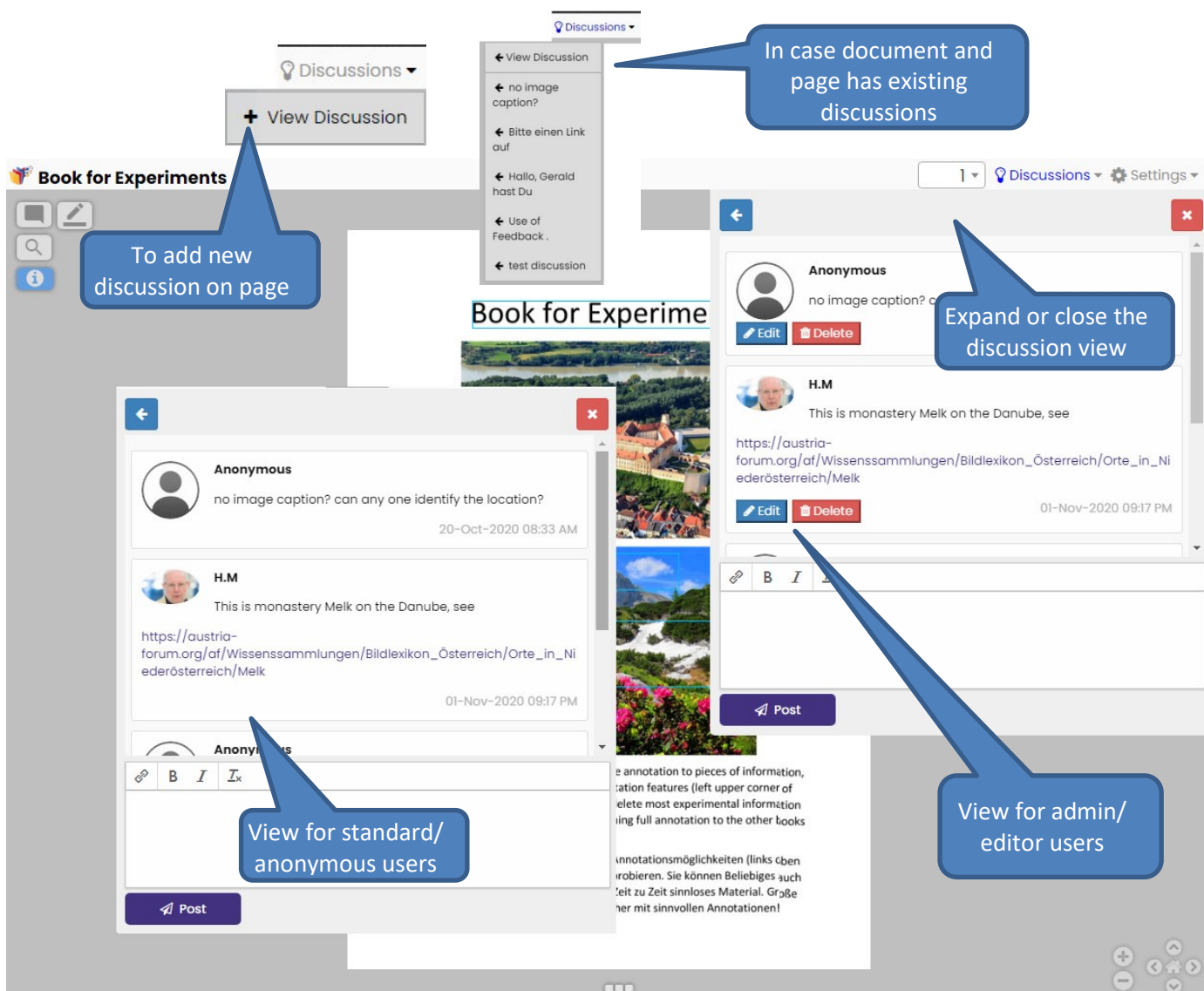
Figure 23: Page discussion board

Table of Contents in NID

Table of Contents can be generated at the time of document addition or later on, using the administration console (Under A.I Features). Table of contents is made available in side panel of document viewer by clicking the "Table of Contents" icon in the viewer. The ToC generation works by either creating a manual page reference table or by selecting an existing table of content page in pdf document and adjustment of parsed data for creation of necessary digital bookmarks (more details in admin manual).
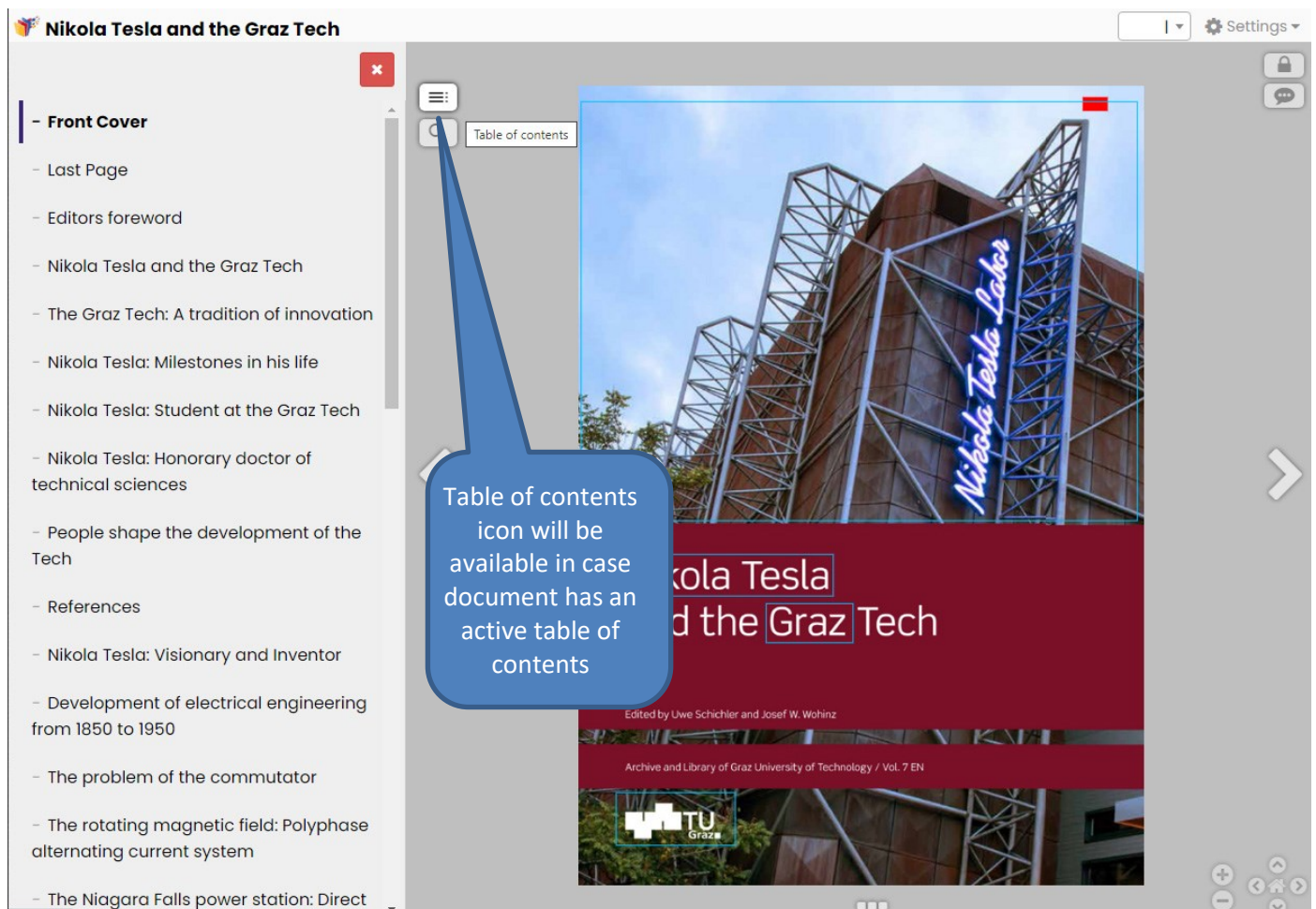
Figure 24: NID document viewer Table of Contents

New NID contributions and Information links

The main library portal has two links that leads to a list of newly added documents and articles that are recently updated. The "INFO" link leads to an article maintained by the library administrator with information and links to multimedia contents about NID Library platform and its use.
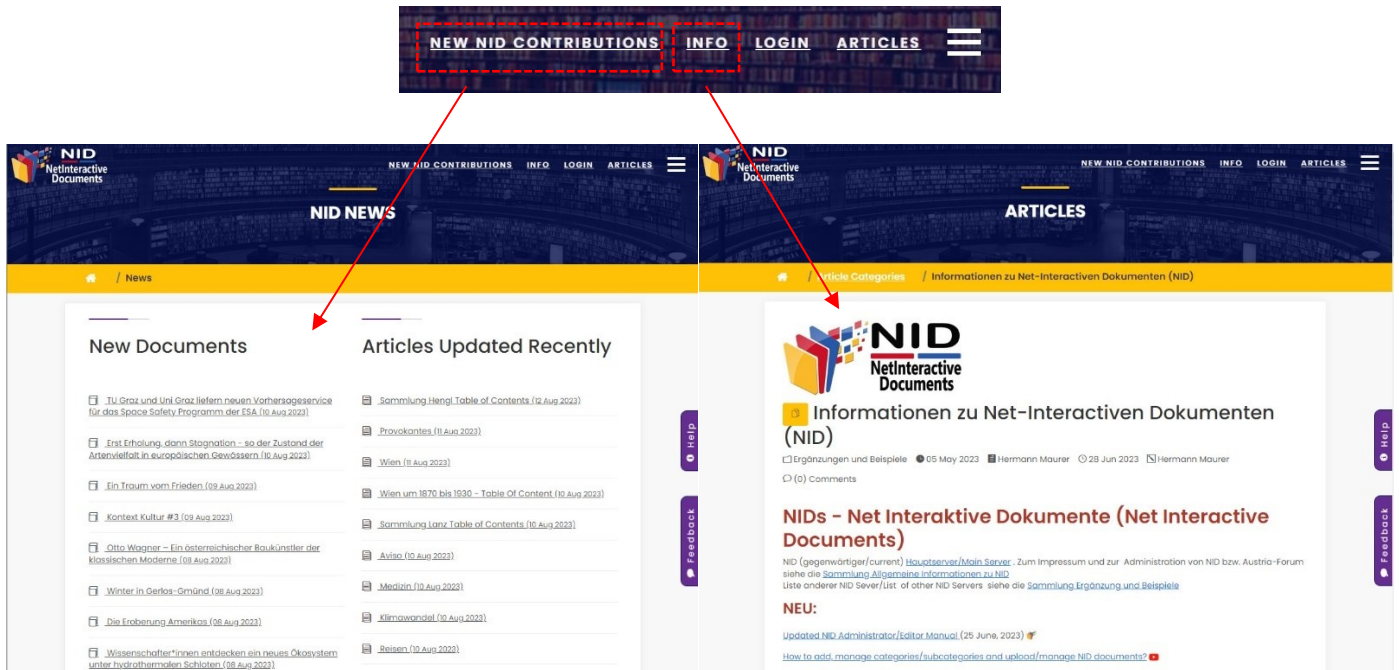
Figure 25: NID Book Mobile Viewer

Portal Menu Links (List, Language Selection, User Registration)

Besides frequently used links and contents displayed on main page, a menu icon at the top left corner of the portal leads to further options.
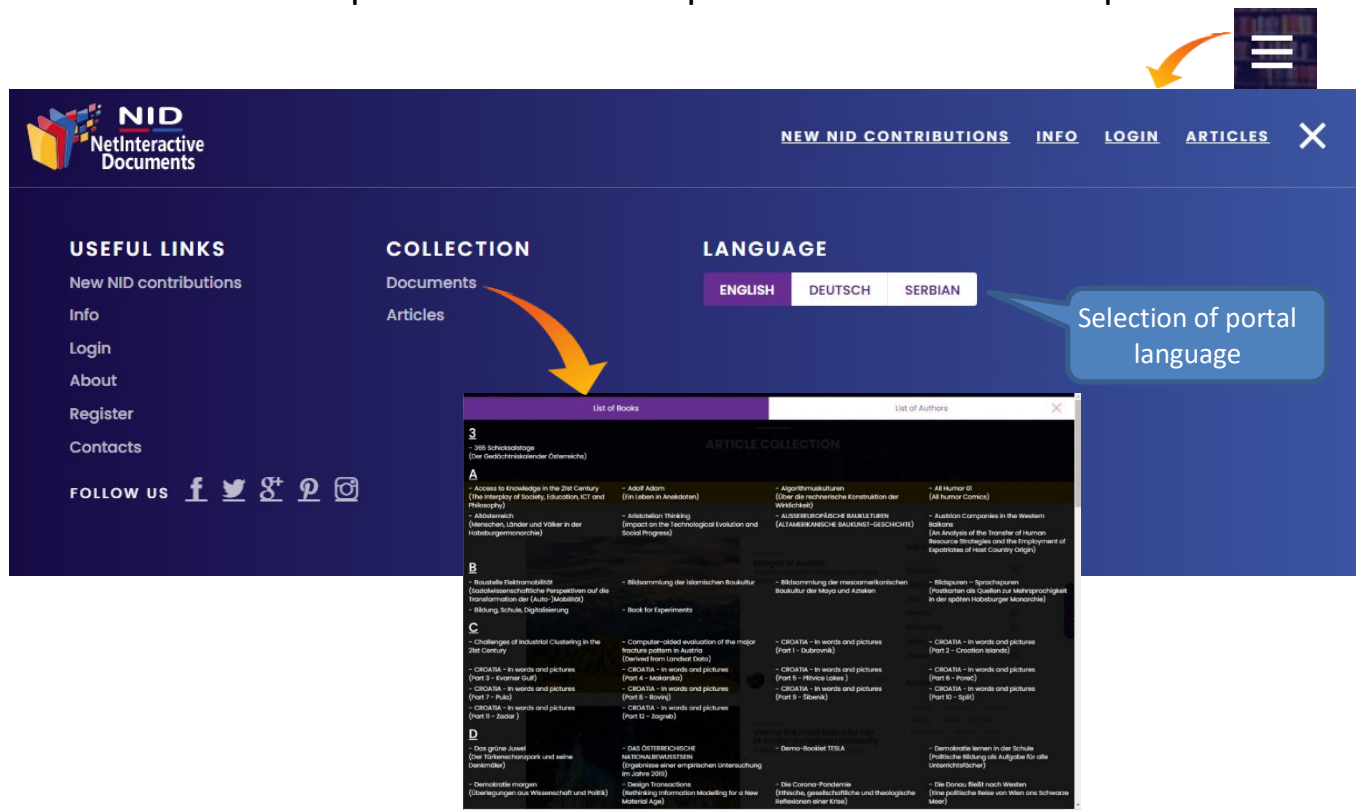
Figure 26: Menu Section (Document and author list, Language Selection)

In addition to the comprehensive search facility, the "Documents" link inside portal menu view provides a convenient access to alphabetically sorted lists of documents and authors available in library.

NID system users can also select the interface language from the available options. More language options can be added based on user requirements.

Other useful links available here includes new contributions, system information, login, about, user registrations and contact information.

Annotations are extra pieces of information associated with a particular point in a document's page. Broader significance of adding supplementing information or extraction of some information for use elsewhere increases the granularity of the digital information stored in the library.

NID's annotation feature enables its users to write comments in **text**, add **links**, **pictures**, **audio**, **movies, maps** that overlay the original document's content. The standardized annotations as part of page manifest allow the exchange of information with interoperable clients and servers.

NID offers the functionality to add links to and from document pages, these page links can be from internal and external sources. Anonymous users browsing the library will see annotations added for public; while registered users have the ability to select annotation type (Group/Private) while adding or viewing annotations in order to have exclusive access to personal or group annotations.
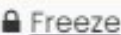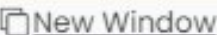
Note: In case moderator email is given for a NID document in admin portal, any annotation added to the document will not be available to public at once. A message about this is displayed once an annotation to document being moderated is saved. The moderator will receive and email from system to verify and enable the added annotation. Moderators/administrators can make these contributions public/active through console annotations link or link provided in notification email.

Viewing NID Annotations

In NID document viewer

- Annotations are available in "**Single Page/Image View**". User can disable the annotation layer using annotation icon in NID Viewer.
- Public annotations on a book page are displayed by default; they appear as **lines**, **rectangle boxes**, **ellipse**, **pin marker, and media icons** in different colors. The default annotation marking identification color is **Aqua Blue** which turns **Yellow** on mouse over. However, a user may choose any different color to highlight different annotation types.
- It is important to note that by default users are presented with **"Public"** annotations. In order to view **"all"** annotations or group specific annotation only user must select appropriate option using the **"Group"** function in **"Settings"** top menu.
- Annotation **information boxes** appear when cursor is **moved over** to

marked location, the information box disappears when the cursor is **moved away** from annotation location.

The top section of annotation box has links to **Freeze**, **Link**, **New Window** functions 🔒 Freeze ⦿ Link 🗔 New Window . Freeze is use to block the display of annotation so one can watch a longer video or continue to see annotation contents even if the mouse is taken away from annotation area. Link copies the absolute link to the annotation to clipboard. The copied link when accessed opens the NID document URL with annotation focused/opened. The New Window link opens the content of annotation box in larger window for a better view.

- Privileged/logged in users will have links to **edit** and **delete** ✎ Edit 🗑 Delete a particular annotation besides the above-described top menu. Admin/Editors can choose to edit the existing annotation contents or remove the annotation from the page.
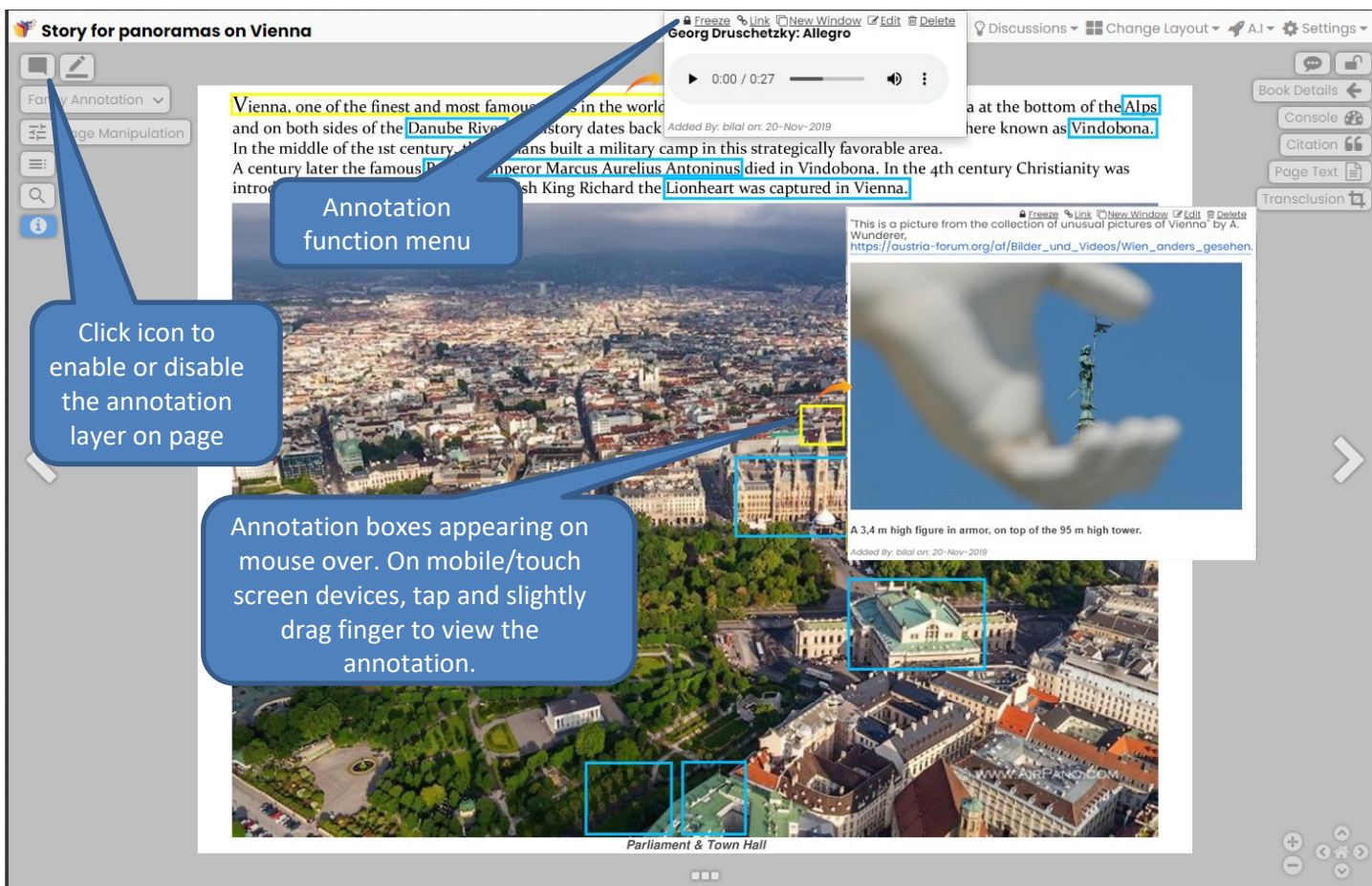
Figure 27: Viewing annotations in NID Viewer

Group selection for annotations, discussions and quizzes

Registered and logged in users of NID Library can use the ⚙ Settings ▾ 👥 Group "Group" option for viewing and adding of annotations (also quizzes and discussions) for a particular user group available in the library system.
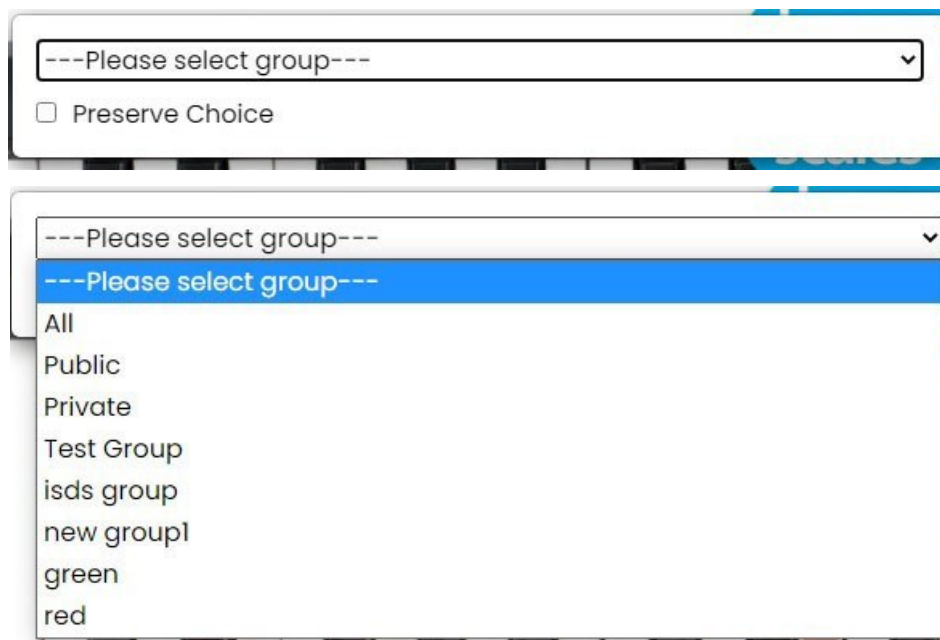
Figure 28: A sample group type selection for a registered user

This feature is useful when a registered user wants to add private annotations for personal use or wants to share certain information with a particular group. A simple list that explains availability of different types of annotations/quizzes is seen as

- ✓ All available annotation (Public and group based)
- ✓ Public (Available to All)
- ✓ Private (Only available to user's account)
- ✓ Selected group (Group membership required)

The group selection choice can be made persistent for a user by selecting the "Preserve Choice" checkbox.

Adding Annotations

Registered users can add annotations on document pages using the following menu icons available in Image View/ single page mode.
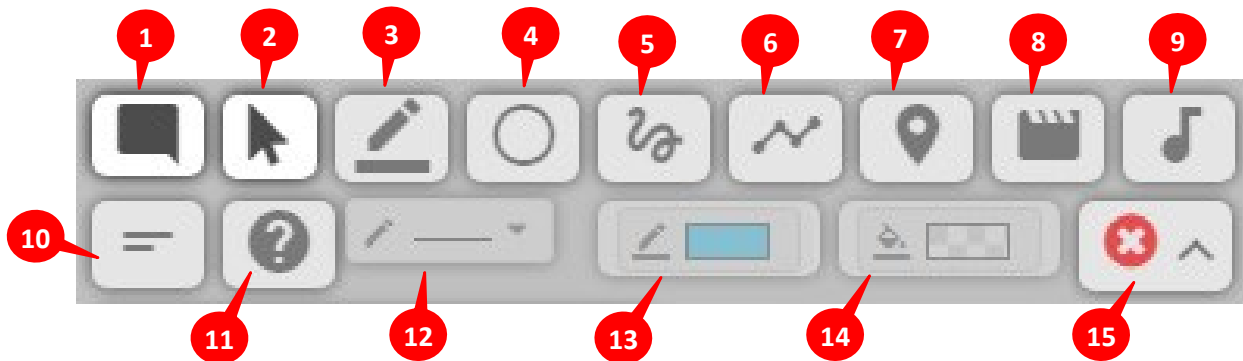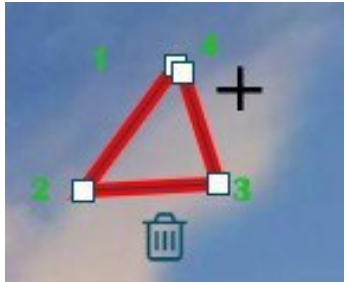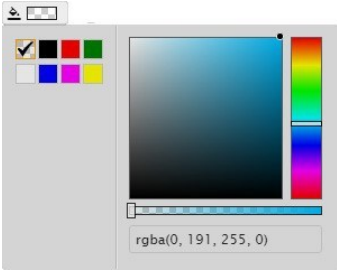
Figure 29: Advance Annotation addition tool box

S. #	Description	Illustration
1	Click to show / hide annotations on page and the tool bar above.	
2	Click to select standard pointer for normal page operations; the pointer is switched to plus sign pointer when user selects any of the annotation drawing tool.	
3	Standard rectangle annotation marking tool. Click to select the tool and move the mouse to location on page where annotation placement is desired. While pressing left mouse button drag the pointer to draw the rectangle. Leave the mouse button on desired size; an annotation editor box will appear [ref. **Annotation Editor**] add the desired information and press save.	
4	Ellipse annotation marking tool. Click to select the tool and move the mouse to location on page where annotation placement is desired. While pressing left mouse button drag the pointer to draw the circle. Leave the mouse button on desired size; an annotation editor box will appear [ref. **Annotation Editor**] add the desired information and press save.	
5	Free hand line annotation marking tool. Click to select the tool and move the mouse to location on page where annotation placement is desired. While pressing left mouse button drag the pointer to draw the line shape. Leave the mouse button on shape; an annotation editor box will appear [ref. **Annotation Editor**] add the desired information and press save.	

6	Polygon annotation marking tool. Click to select the tool and move the mouse to location on page where annotation placement is desired. Press left mouse button once to mark the starting point of shape in example illustration it is point (1) move the mouse to next location according to desired annotation shape, press left mouse once again at point (2), move pointer to next point according to desired shape in this case point (3) and in the end at where shape completes instead of single left mouse click, press the left mouse twice in this case at point (4) this double click will finalize the shape and an annotation editor box will appear [ref. **Annotation Editor**] add the desired information and press save.	
7	Pin annotation marking tool. Click to select the tool and move the mouse to location on page where annotation placement is desired. Press left mouse button once to drop pin on location; an annotation editor box will appear [ref. **Annotation Editor**] add desired information and press save.	
8	Video annotation marking tool. Click to select the tool and move the mouse to location on page where annotation placement is desired. Press left mouse button once to drop video icon on location; an annotation editor box will appear [ref. **Annotation Editor**] add the desired information and press save.	
9	Audio annotation marking tool. Click to select the tool and move the mouse to location on page where annotation placement is desired. Press left mouse button once to drop audio icon on location; an annotation editor box will appear [ref. **Annotation Editor**] add the desired information and press save.	
10	Text annotation marking tool. Click to select the tool and move the mouse to location on page where annotation placement is desired. Press left mouse button once to drop text icon on location; an annotation editor box will appear [ref. **Annotation Editor**] add the desired information and press save.	
11	Question annotation marking tool. Click to select the tool and move the mouse to location on page where annotation placement is desired. Press left mouse button once to drop Question icon on location; an annotation editor box will appear [ref. Annotation Editor] add the desired information and press save.	
12	Click to select the desired size and style of annotation marking tools. One can select thickness, solid lines, dotted or dashed style lines. In order to use this feature first select any of the annotation marking tool.	

13	Click to select the color of annotation marking tools. One can select from basic pallet or choose from more RGBA scheme. In order to use this feature first select any of the annotation marking tool.	
14	Annotation filling function, click to select the desired color for filling inside rectangle and ellipse annotations. User can also select the filling opacity level from a slider available in tool. In order to use this feature first select rectangle or ellipse annotation marking tool.	
15	Click to minimize extended annotation tool bar	

Annotation Editor

After placement of necessary marking of annotation, next step is to use the annotation editor to add information contents. The pop-up information editor allows addition of multimedia contents. Image below explains different features of annotation editor.
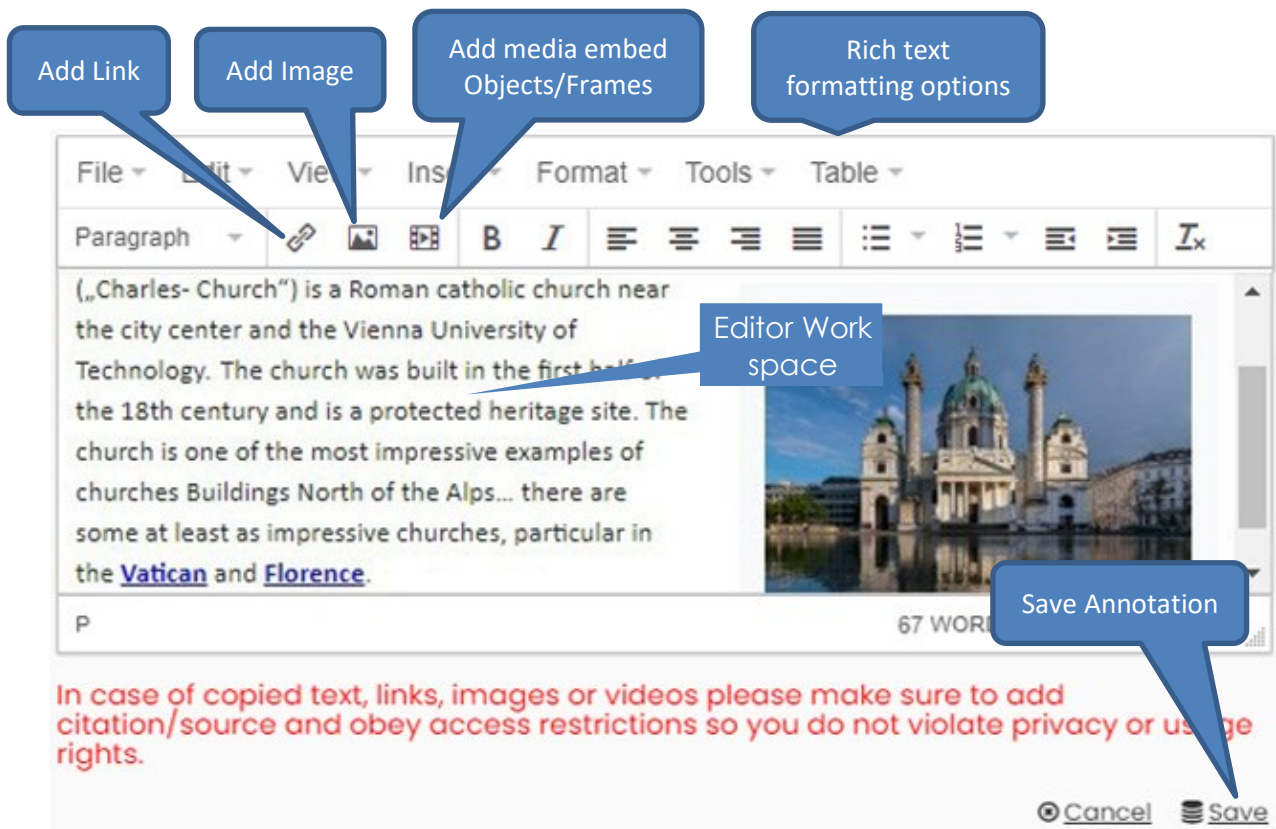
Figure 30: Annotation editor

- User can **paste** the **formatted text** from common **word** software in annotation editor **work space**. It will support pasting of contents with formatting information.

- The editor also allows format adjustment options within editor. This includes **bold**, **italic**, **left-right text alignment** and **format clearing**.

- The "**Source code**" link in "**Tools**" menu allows technology aware users to view and edit html source code for more advance formatting of annotations.

- The "Insert/Edit Media" icon allows users to embed popular media contents e.g. YouTube, Google Maps etc.

- A user can select text in workspace and click on **Add Link** icon for adding link to selected text. The link URL is given in a popup form, it can be either an external http(s) URL, an internal book page URL, or email URL. The user can additionally add title, and set target URL to open in same browser window or in a new tab. By default the URL will open in new window.

- While adding annotation selection also determines the category of users who will have access to the annotation being added.
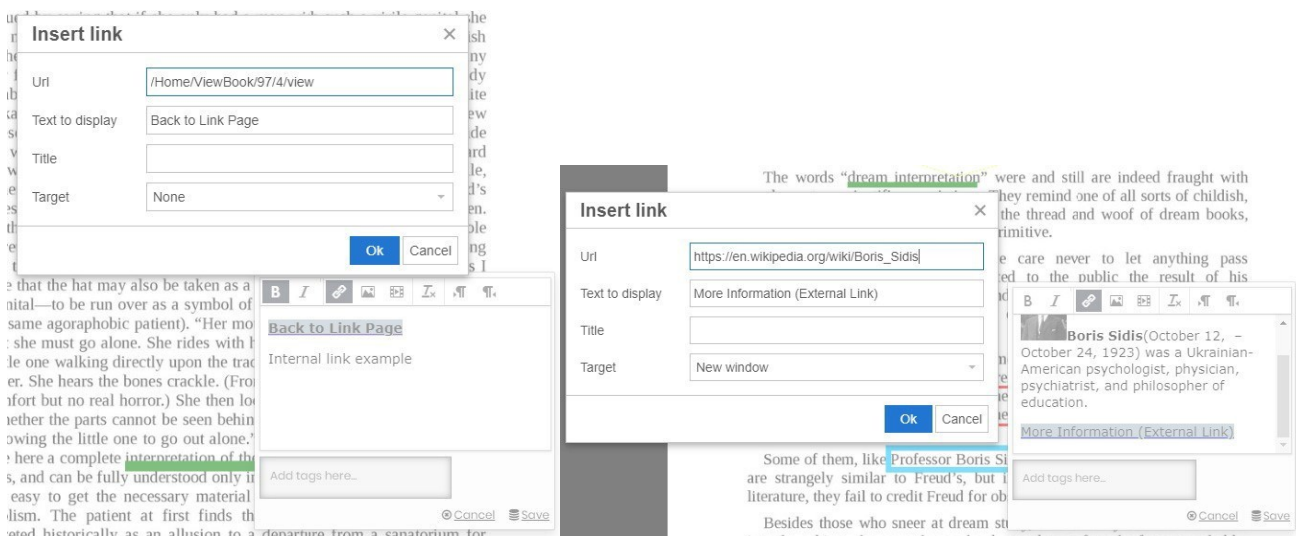
Figure 31: Internal and external link example in NID annotations

- User can add an image to the annotations using an image URL and specifying the height and width of image for appropriate placement in annotation. In case user wants to upload an image to the NID library, the upload tab is used to select the local file for uploading on the NID server (for uploading image, user is required to login).
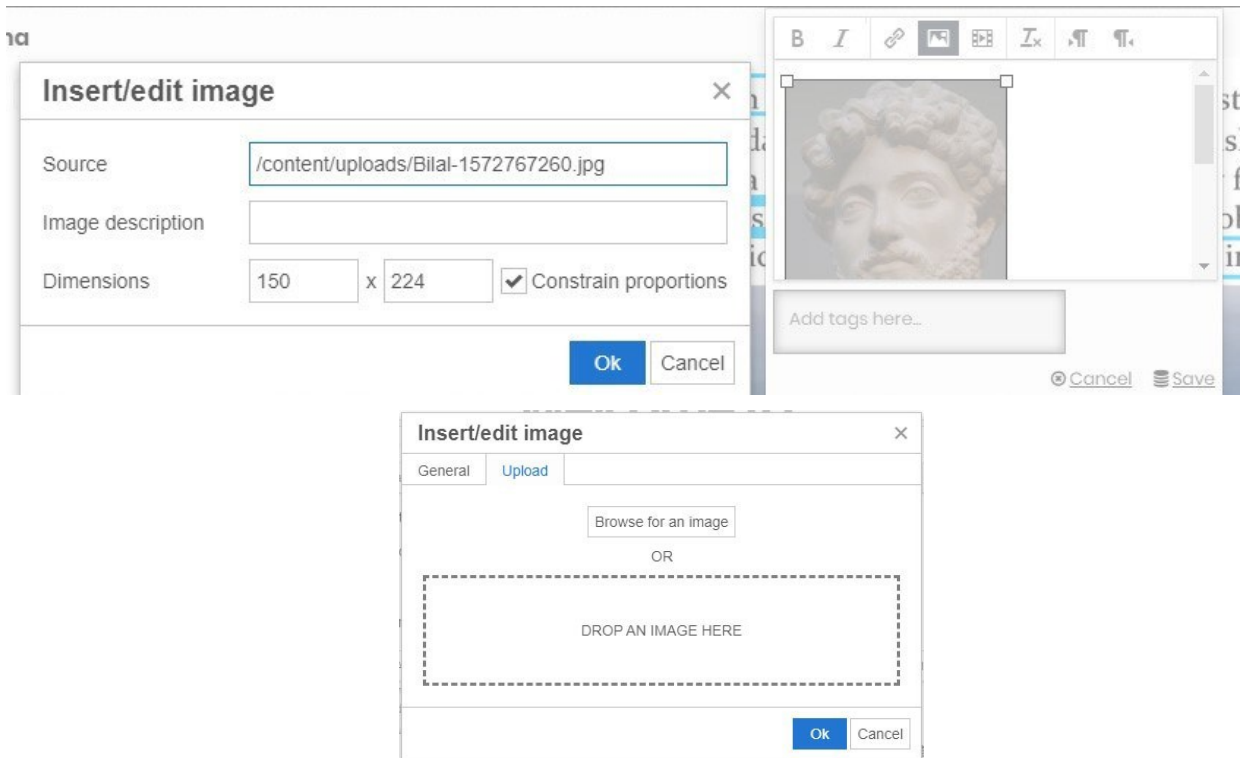
Figure 32: Example of image addition using upload or source URL

- Another powerful feature of NID annotations is the addition of media in annotations. The media can be videos (including YouTube videos), Audios, and through use of embedded code any specialized content such as maps or Java applets etc. The same media addition option for book pages can be used to add discussion threads initiated in articles. The iframes tags can be used to insert various other content sources inside the annotation box.
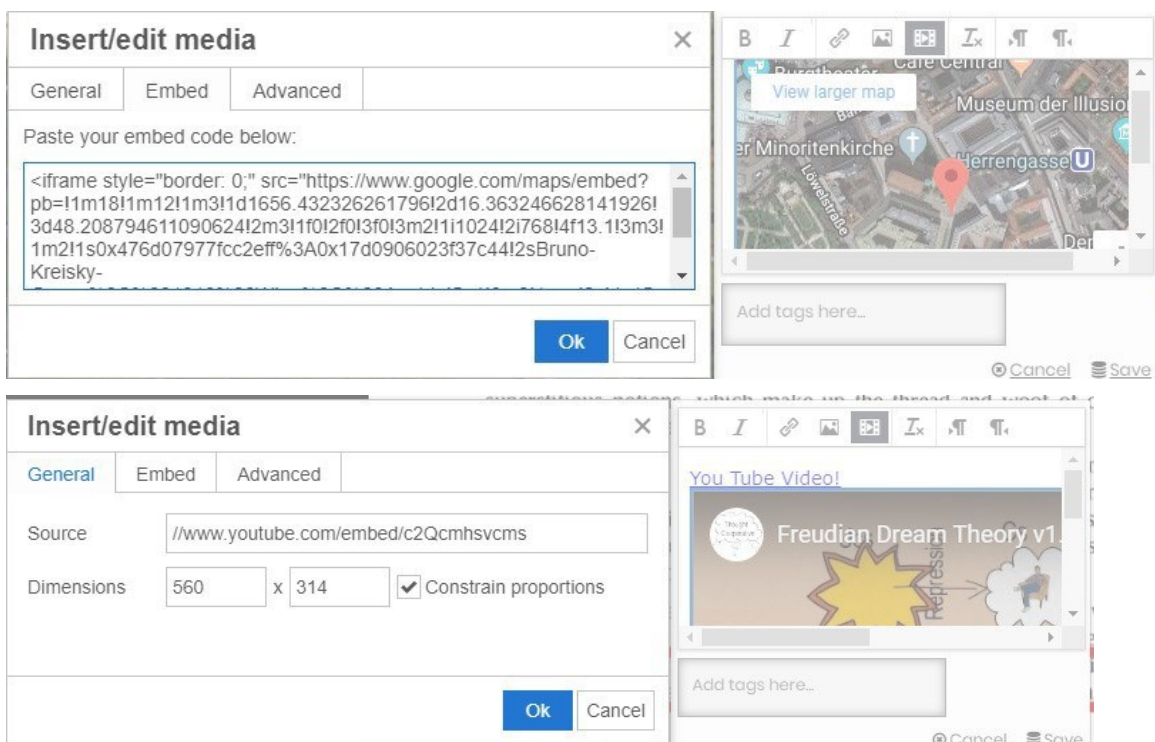
Figure 33: Example of map and YouTube video media addition in NID annotations
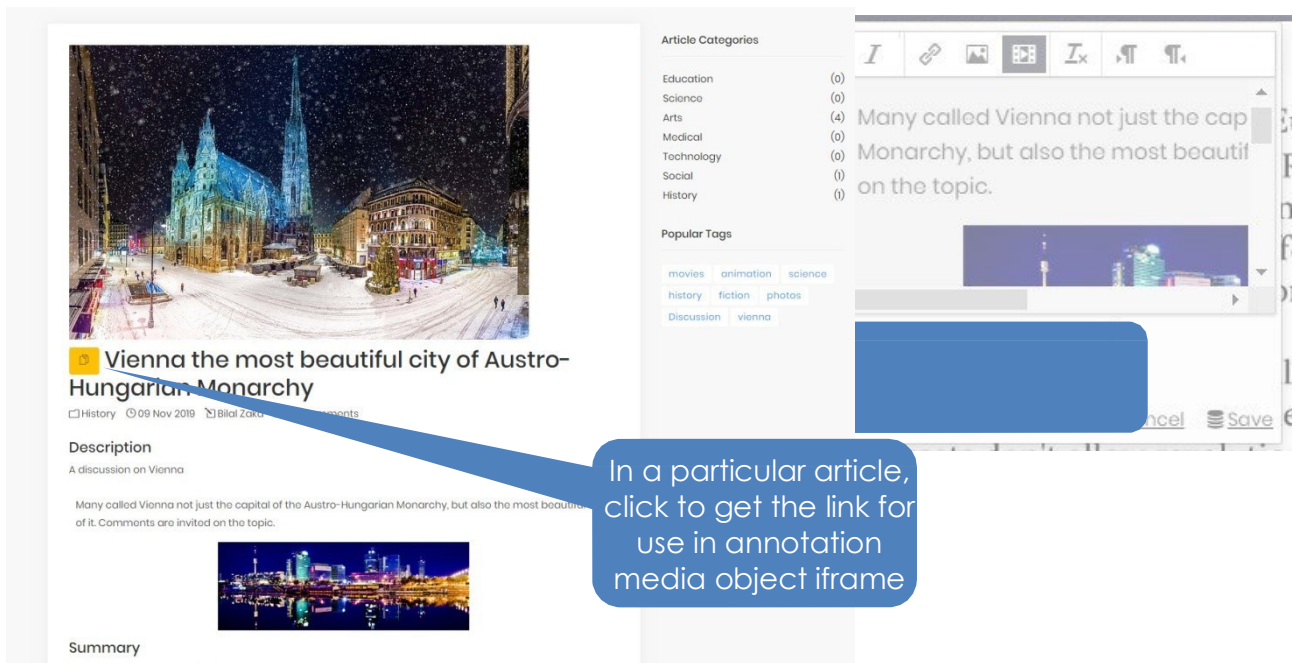
Figure 34: Example of NID article addition in annotations

NID Articles (Wiki)

The major strength of a NID library is its capability to support various user roles and enabling them to create and consume different forms of contents including article pages. The NID system supports an integrated wiki/blog system which further enriches the library information base. The access to article section is given in the main library page top menu as "Articles" **ARTICLES** link. The articles are organized in article categories, please note that article categories are different from document categories.
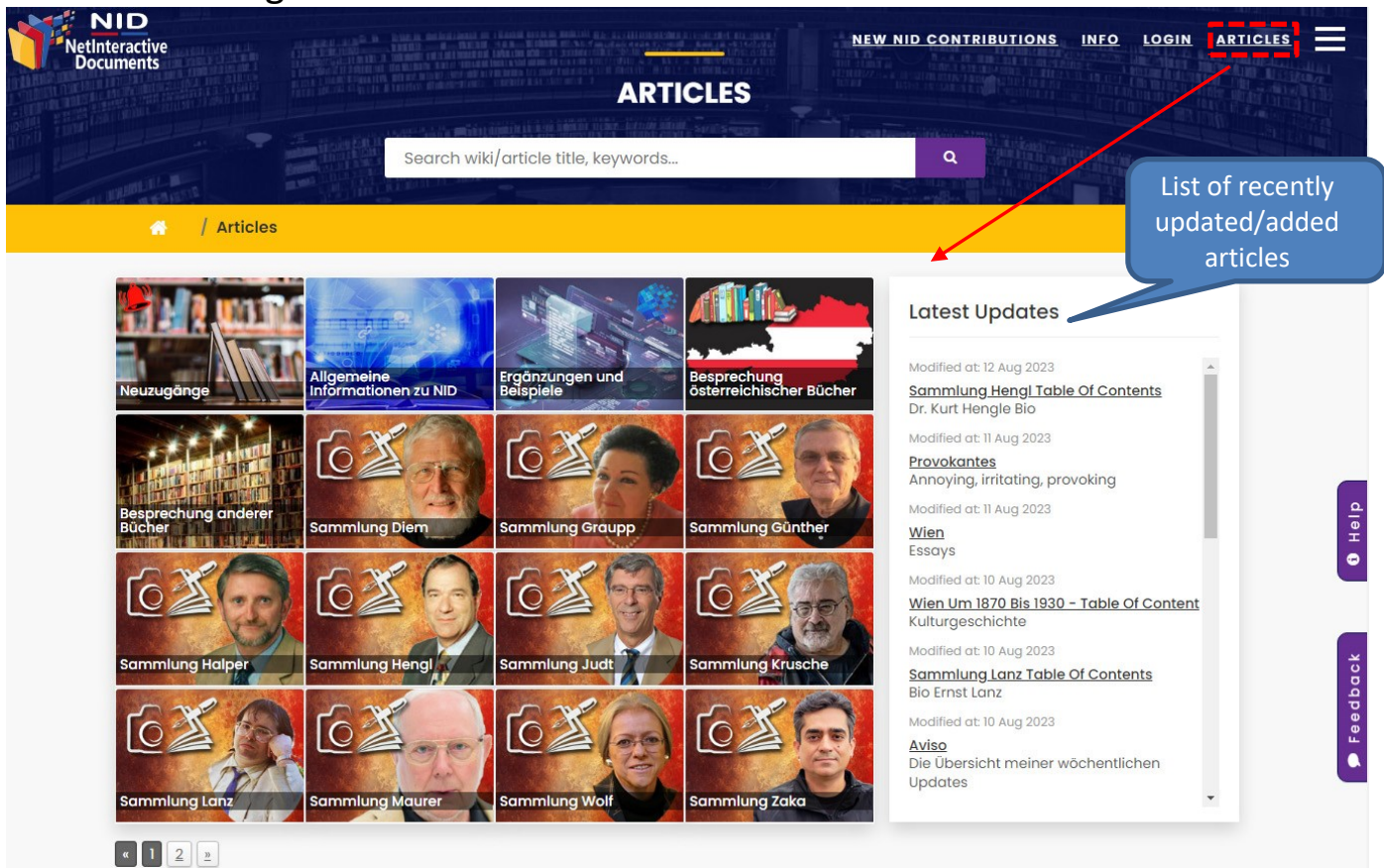
Figure 35: NID Article categories view

While the document categories are managed from admin portal, article category management is made available in library portal under console section.
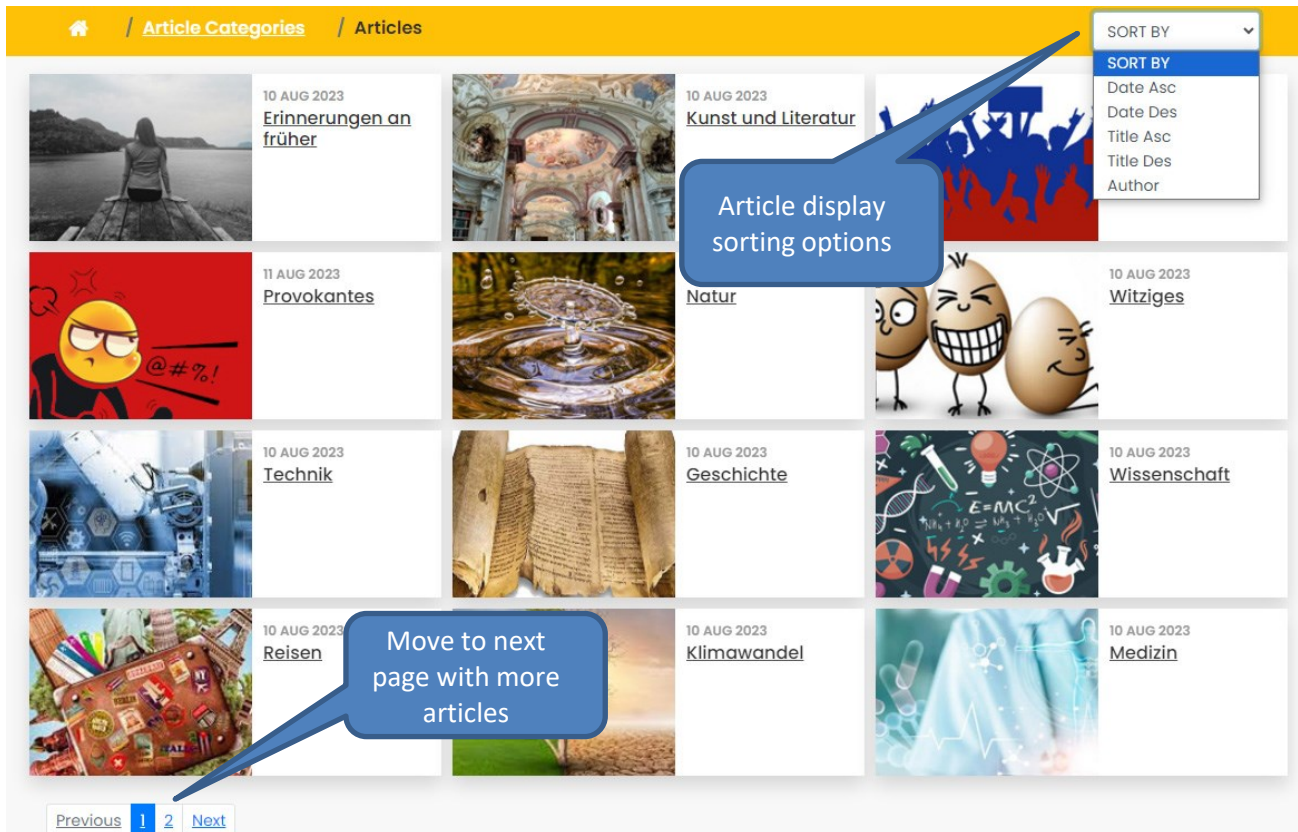
Figure 36: List of articles inside a category

Figure 37: Article view

The NID console section provides logged in users with a number of features depending on their access rights. Link to Console section is available in main library top menu when a user is logged in or it can also be accessed from document viewer (Full menu Mode).
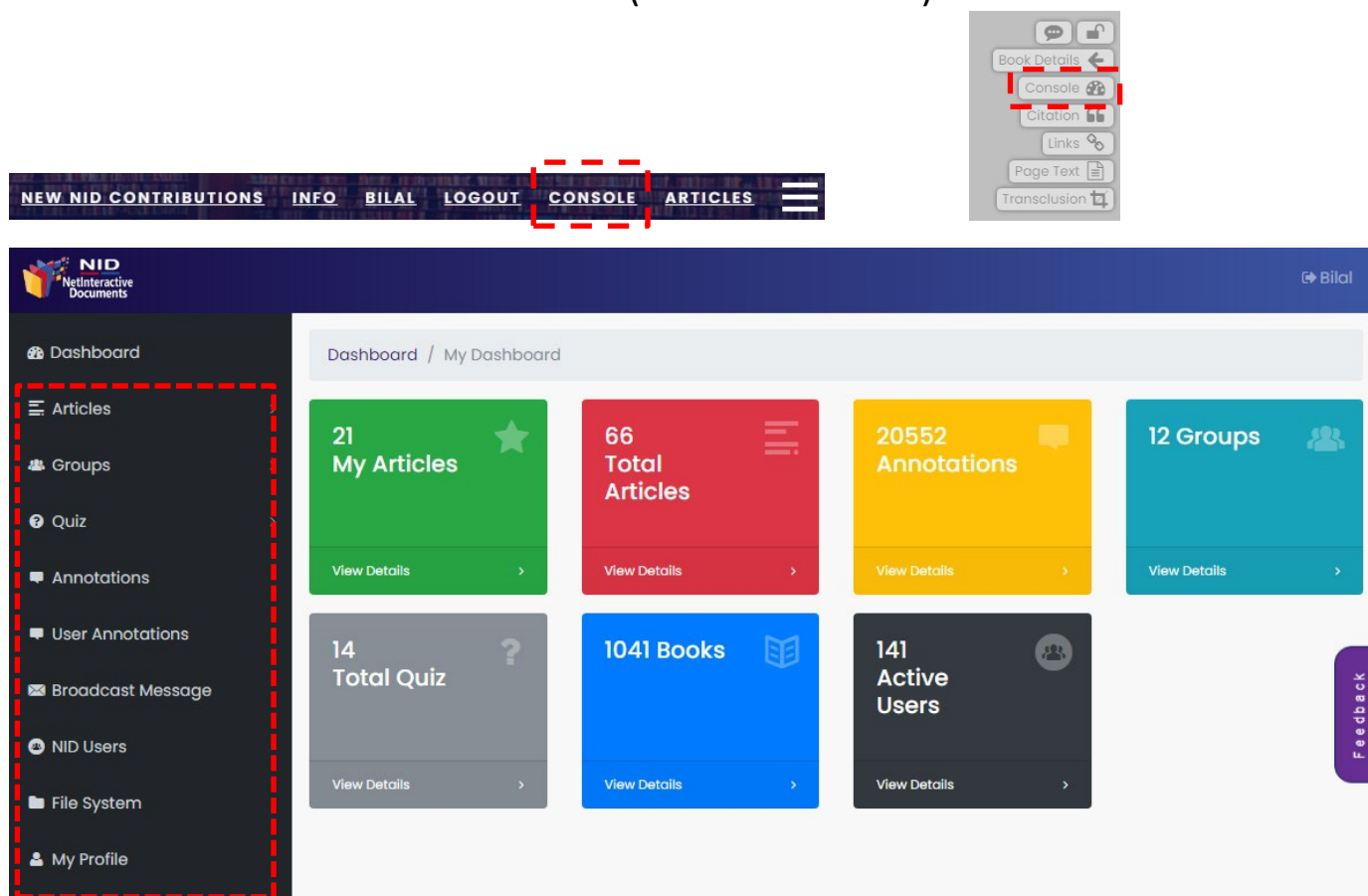
Figure 38: Article view

The console section displays library statistics to the users when accessed. Following sections give details of functions under each menu item in left side panel of the console section.

Articles Functions

The first link in "Articles" submenu "**Add Article**" allows users to add a new article page in the NID library system. Figure 38 shows the form used to create the article. User must provide a suitable title, select an article category from the dropdown list, upload an article cover image, provide a brief description and finally fill in the main page contents. One can quickly add a new article category using the "+Category" button. However, the category added must be later edited for a suitable display image. It is recommended that existing categories
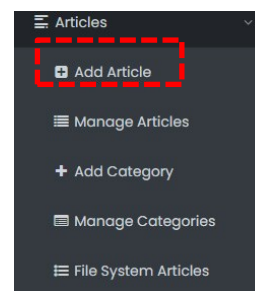
from the available list is used. In case of a new category, one must create an article category using the respective submenu function. Users can optionally upload attachments with an article. The added attachments files (documents/multimedia files) will appear at the bottom of the page as downloadable files. The contents section of the form holds the main article page data. Users can copy and paste the formatted text/image contents from any local word processor e.g. MSWord, OpenOffice, Google Docs etc. The built-in rich text formatting tools available in article content editor can further be used to format the article. Users can upload images to be placed in article and use media URLs for the addition of audio/video contents. In case one desires to upload media files to local NID server, user can use the "+Media" button to upload the content to NID server and get a media URL to be used for the display of file in article. The uploaded file is also accessible using the "File System" submenu. After the provision of necessary data, pressing the "Save" button creates the new article and place in under the given category.

Figure 39: Adding a new article

The second link in article submenu "**Manage Articles**" allows users (Editors/Admins/Owners) to manage (edit/delete) existing articles in NID system. Under this section users are presented with a list of existing articles (Descending Date order). User can use the search box on left top side of list to limit the list to desired results after typing few words of article title.

Figure 40: Manage existing articles

The "Active" checkbox can be unchecked to disable article view to general library users. This is useful in case you don't want to permanently remove the article but just want to disable its view. Featured Article check box is used to assign a higher display priority to an article in promotional display banner (currently disabled). When a new category is created a Table of Contents article type is automatically created (displayed first in article list of that category). The article category managing user uses this ToC type default article to list information inside this article category. Such Table of Contents type articles are presented as "TOC" in the "Featured Article" table column. The "Delete" button and "Edit" buttons at the end of each listed article row can be used to completely remove the article or open it in article editor for making the changes. One can also use the "Edit" function to change placement of article in a different category.

"+ Add Category" link under the "Articles" is used to create a new article category. Users are required to give a suitable category name and a display image to create new article category. It is strongly recommended to use small size JPG format images with similar dimensions for the best display of article category image tiles. Very large images may take time to load and are unnecessary considering the display of category thumbnail grid. On main NID server we are using a uniform 250 x 177 pixel dimension for article category images.
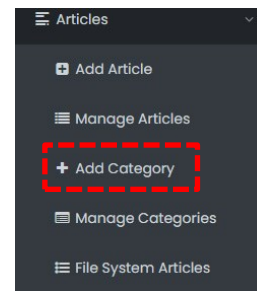
Figure 41: Adding a new article category

"Manage Categories" link under the "Articles" gives access to the management functions (Delete/Edit) for the existing article categories.

Figure 42: Manage existing article categories

"File System Articles" feature is created to help library administrators/Editors import complete folder-based web pages/images archives to NID article system. The user provides complete set of html pages, images and any other support files to the library administrator and it places the folder under an
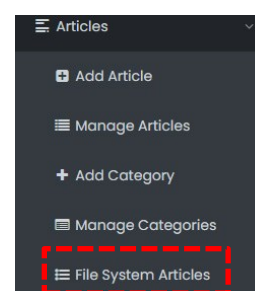
assigned local on server, creates an article entry with "iframe" tag pointing to the folder location for the display of imported data. The **"File System Articles"** link gives access to folder and files of imported data for editing. (The feature must be used by library administrators with basic web/html knowledge)
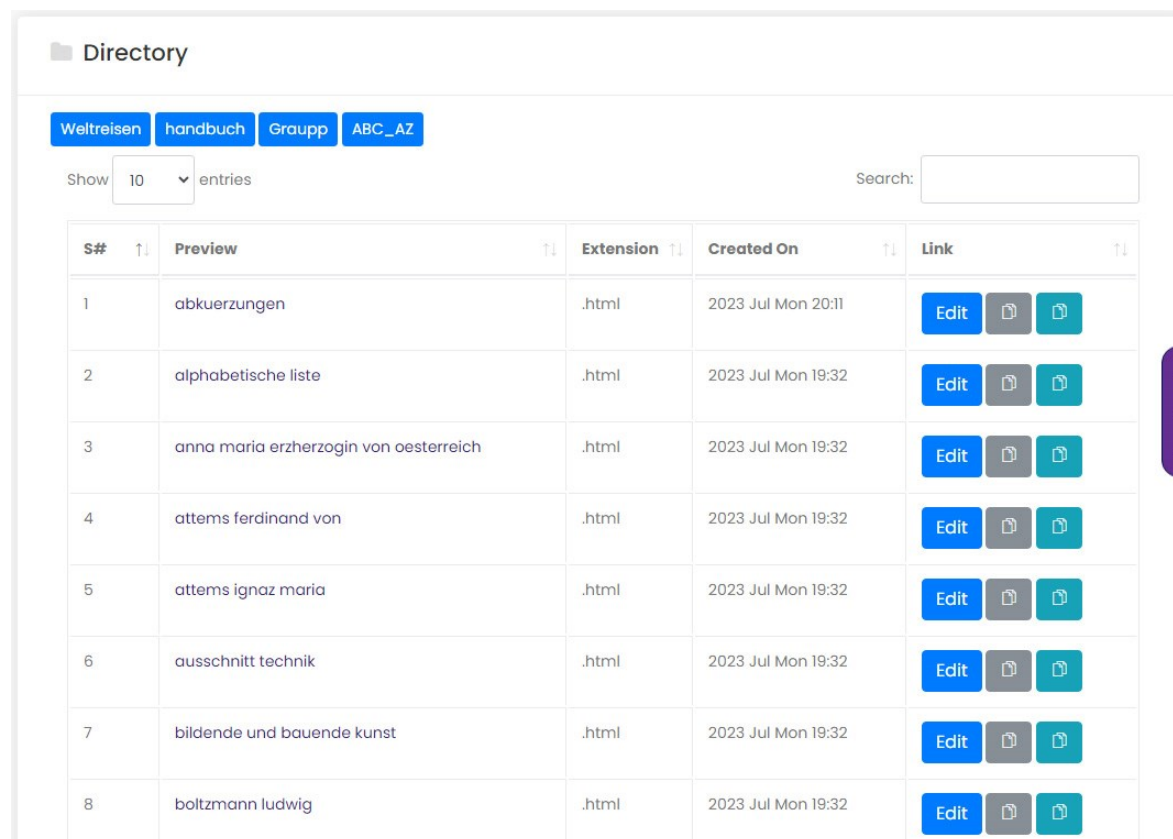
Figure 43: Manage File System articles

Group Functions

Users of the NID library can be organized in groups for the access to exclusive information. This exclusive information can be in form of annotations, discussions meant for the certain user groups, quiz interactions for particular user groups or documents with access restricted to certain user groups. The "**Groups**" menu in the console section provides means to "**Add Group**" to the NID library.
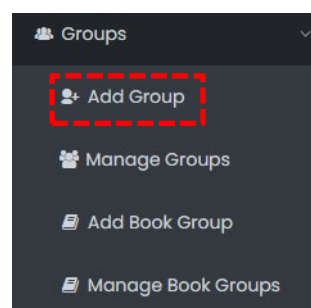
It is important to note that in order to view group information the group admin must also be added as group member. Administrator can assign group admin role to any of the NID users that are part of group.

Figure 44: Add a new user group in NID Library

The "**Manage Groups**" link provides with a list of existing user groups, one can Edit ✏️ the group members, Delete 🗑️ the group or View 👥 the group members. The Search box on top left corner of the group list helps narrow down the presented user group list.
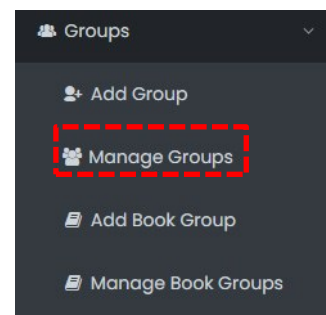
S#	Group Name	Group Admin	Created By	Actions
1	Test Group	Aqib Malik	Aqib Malik	✏️ 🗑️ 👥
2	Reader-Group	Bilal Zaka	Bilal Zaka	✏️ 🗑️ 👥
3	isds group	Marco Fuchs	Marco Fuchs	✏️ 🗑️ 👥
4	public	Bilal Zaka	Bilal Zaka	✏️ 🗑️ 👥
5	red	Marco Fuchs	Marco Fuchs	✏️ 🗑️ 👥
6	green	Marco Fuchs	Marco Fuchs	✏️ 🗑️ 👥
7	Test Gruppe 1	Sonja Eisenberger	Sonja Eisenberger	✏️ 🗑️ 👥
8	Hohmann –Architektur	Marco Fuchs	Marco Fuchs	✏️ 🗑️ 👥
9	EKW	Peter Diem	Peter Diem	✏️ 🗑️ 👥
10	Heraldik und Symbolforschung	Peter Diem	Peter Diem	✏️ 🗑️ 👥

Showing 1 to 10 of 12 entries

Previous **1** 2 Next

Figure 45: Manage existing user groups in NID Library

The "**Add Book Group**" function is used to restrict access of a selected NID document to a selected user group. This setting when applied supersedes the DRM access setting given to the document in the library administration portal.
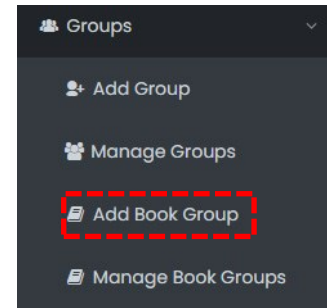

Select the document and group name from the drop-down list to restrict access of document to selected user group

Figure 46: Assign access rights for a document to selected group

The "**Manage Book Groups**" shows the list of existing documents assigned to selected user groups. Users with administrative and editorial rights can view 🖼 the users of groups or remove/delete 🗑 the group access restriction to the selected document.
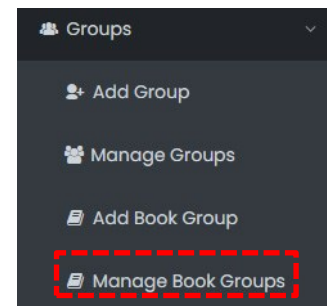
S#	Book	Group	Actions
1	AUSSEREUROPÄISCHE BAUKULTUREN – ALTAMERIKANISCHE BAUKUNST-GESCHICHTE – Vol. 10	Hohmann –Architektur	🗑 🖼
2	AUSSEREUROPÄISCHE BAUKULTUREN – ALTAMERIKANISCHE BAUKUNST-GESCHICHTE – Vol. 11	Hohmann –Architektur	🗑 🖼
3	AUSSEREUROPÄISCHE BAUKULTUREN – ALTAMERIKANISCHE BAUKUNST-GESCHICHTE – Vol. 11	Hohmann –Architektur	🗑 🖼
4	AUSSEREUROPÄISCHE BAUKULTUREN – ALTAMERIKANISCHE BAUKUNST-GESCHICHTE – Vol. 12	Hohmann –Architektur	🗑 🖼
5	AUSSEREUROPÄISCHE BAUKULTUREN – ALTAMERIKANISCHE BAUKUNST-GESCHICHTE – Vol. 13	Hohmann –Architektur	🗑 🖼
6	AUSSEREUROPÄISCHE BAUKULTUREN – ALTAMERIKANISCHE BAUKUNST-GESCHICHTE – Vol. 14	Hohmann –Architektur	🗑 🖼
7	AUSSEREUROPÄISCHE BAUKULTUREN – ALTAMERIKANISCHE BAUKUNST-GESCHICHTE – Vol. 4	Hohmann –Architektur	🗑 🖼
8	AUSSEREUROPÄISCHE BAUKULTUREN – ALTAMERIKANISCHE BAUKUNST-GESCHICHTE – Vol. 9	Hohmann –Architektur	🗑 🖼

Figure 47: Manage book group setting for NID documents

Quiz Functions

The first link under "**Quiz**" submenu is "**Add Quiz**". It allows users to add a new quiz to a particular NID document. Users are required to give the quiz a suitable title, and assign the group from the dropdown list. Users are also required to select the NID document for the quiz. Selection of "Group" is very important and it will determine the way quiz will be presented and logged.

The group drop-down list shows all existing user groups for the selection along with a group type "Public". In case the "Public" group is selected; the quiz will appear to all users (all logged in or anonymous users). In case a particular group is selected, the group user must be logged in and user must select the quiz from document viewers "Settings" ⚙ Settings ▾ → "Quiz" 💬 Quiz menu to see and respond to the quiz.
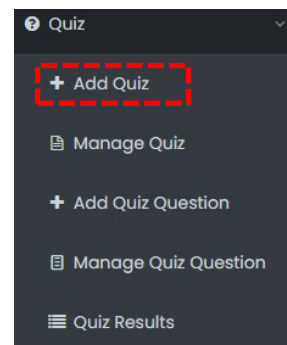
Figure 48: Adding a new quiz

"**Manage Quiz**" function allows to remove any existing quiz assigned to book and its associated questions data.

Figure 49: Manage existing quiz in NID system

After saving the Quiz, the next step is to "**Add Quiz Question**". This function is used to create questions, specify answer options, provide hints, and select the correct answer options.

The hint text associated with each answer option is useful in case of public quiz, where in case a user responds incorrectly, a tip is given and on a revisit to the page same quiz is presented until the correct answer is given. For public quiz, the system uses browser cookies to determine if a user has already taken the quiz. This is done to make sure the quiz is not presented repeatedly. A user may clear the browser cookie to see the public quiz again.
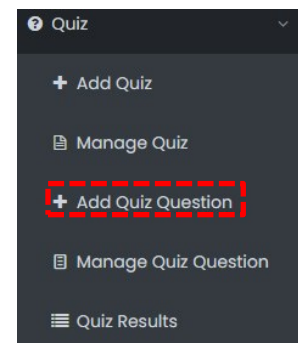
ℹ **Quiz Question**

Quiz *

---Please select quiz--- ▾

Book Pages *

---Please select quiz first--- ▾

Question *

Question Text

Option 1

Option Text

Hint Text

Option 2

Option Text

Hint Text

Option 3

●
●
●

Option 8

Option Text

Hint Text

Option 9

Option Text

Hint Text

Option 10

Option Text

Hint Text

Correct Option *

☐ Option 1 ☐ Option 2 ☐ Option 3 ☐ Option 4 ☐ Option 5 ☐
Option 6 ☐ Option 7 ☐ Option 8 ☐ Option 9 ☐ Option 10

Save

Select the quiz from available quiz list

Select the document's page where quiz question should appear

Once a page is selected, its image appears here for reference

Optional: Hint is presented to the user when a specific option is selected.

Select one or more correct options.

Figure 50: Adding a quiz question

The "**Manage Quiz Question**" function can be used to select a particular quiz and load all its available questions. The use can then choose to edit ✏️ the data of existing questions or remove 🗑️ them.

Figure 51: Manage quiz questions

The "**Quiz Results**" link gives users a drop-down selection to select from active quiz list. The result data of selected quiz is shown in case the quiz is not a public type quiz (System only saves the group quiz record of the logged-in users).
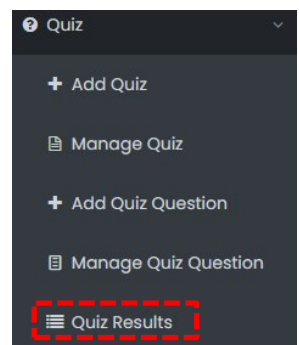

Figure 52: Selected quiz results

Annotation Management

The console section also provides administrative and Editor users means to manage annotations added on NID documents. The link "**Annotations**" provides a dropdown list to select from available NID documents. After the selection, the "Load All Annotations" [Load All Annotations] button displays a list of existing annotation in selected books. User can then view, edit, activate/disable or delete the existing annotations.


Figure 53: Annotation management in console section

The Link "**User Annotations**" provides the list of annotations added by a particular user. This feature is useful to determine interaction behavior of a selected user.
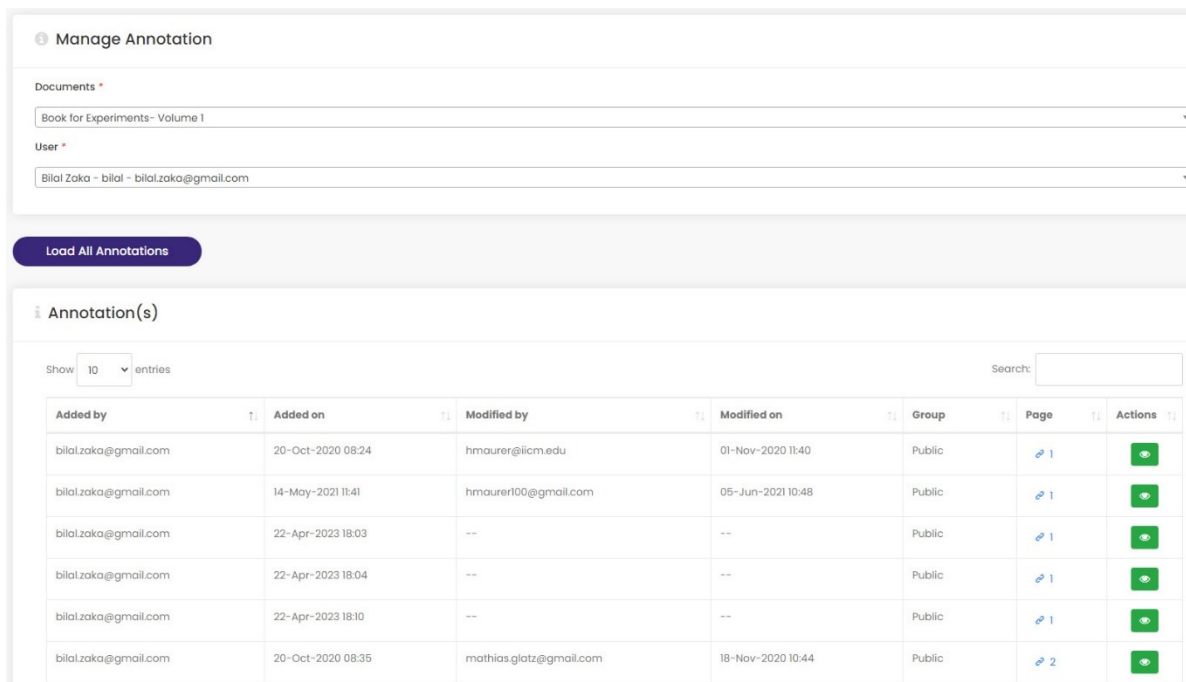
Figure 54: User annotation list view in console section

Broadcast Message

The "**Broadcast Message**" function in console section allows users to select a particular group and send out an email message through NID library system. This is useful when an administrator or editors adds a group specific interaction (e.g. quiz) and want users to enable and participate in the interaction activity. After selection of group from drop-down list user can click the group user icon 👥 to view group members list. In order to use this function, the library administrator must configure the system email settings under the library admin portal.
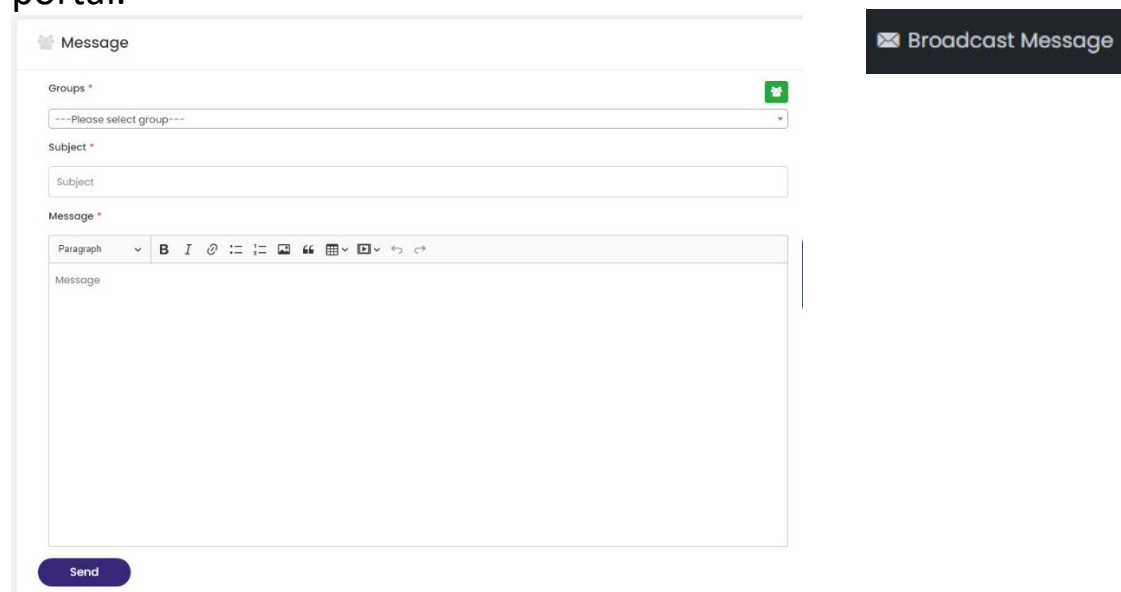

Figure 55: Message Broadcast to library group users

NID Users

The "**NID Users**" link in console section displays the list of existing NID library users, their email address, group membership information and system registration date.


Figure 56: NID Users List

File System Function

NID users with necessary rights can access NID file system functions using the "**File System**" link. The file system section displays the list of already added files into the NID system; user can get the link URLs of existing files for referencing in annotations and articles. User can also use the "Upload files" button to quickly store files in system for later referencing and use.


Figure 57: NID Library file upload facility

My Profile

"**My Profile**" link in console section allows users to view the user profile data and make necessary updates in editable fields e.g. display names, upload user profile picture, and change of user password.
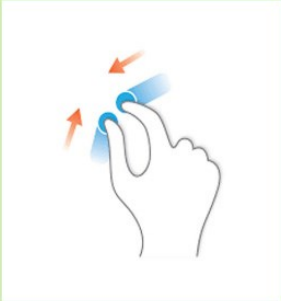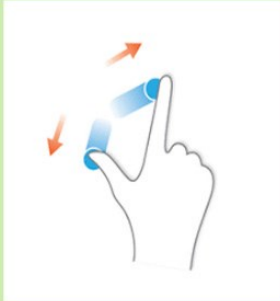
Figure 58: User profile management

Touch screen (mobile device) use tips

Outlook

NID is now fully functional. However, as desired by some users over time more advanced feature will be added. The future development directions are influenced by introduction of artificial intelligence applications. Use of machine learning algorithms on rich datasets available in a digital library system leads to many interesting use cases.

One such example is image object detection algorithm "You Only Look Once" (YOLO) implementation in NID. This feature is useful in case the book being added contains images that are not described nor have text data for indexing. The library admin can apply automatic image detection algorithm to identify and mark certain image types. This can be done using the link "Object Detection" before the standard indexing process. Indexing done after detection process will include detected images in book search. We are currently using a publicly available 80 object categories dataset for identifying and captioning images in NID. In the future, the NID Team will release domain specific image datasets on demand to meet the specialized image detection requirements e.g. medical images, CAD designs, scientific diagrams etc.

Another example of AI application in NID is "Topic Detection" function. The feature is based on Natural Language Processing algorithms and built-in open-source language knowledge models. This processing step will associate key terms/topics with a book and each of its pages. It also determines the links to similar pages within the book and with other book pages of the library. The language knowledge models mature over time and accuracy of topic detection and similarity links improves with increase of structured data in the library system. Our research team plans to investigate and tweak NLP algorithms and language models for recommender systems in libraries.

Our development team is also actively working to include ChatGPT like custom knowledge chatbot feature to the NID library system. We are working on integration of LangChain Framework and a selected local LLM with NID platform to achieve the objective.

Support and information

NID Team

Inffeldgasse 16c, A-8010 Graz

Tel: +43 (316) 873 - 5612

Email: hmaurer@iicm.edu / bilal.zaka@gmail.com

Web: https://austria-forum.org

Main NID Library Site: https://www.nid-library.com